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IN THE MATTER OF:)

) Docket No.

DETERMINATION OF CABLE) 14-CRB-0010-CD

ROYALTY FUNDS) (2010-2013)

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4 IN THE MATTER OF:)

5) Docket No.

6 DETERMINATION OF CABLE) 14-CRB-0010-CD

7 ROYALTY FUNDS) (2010-2013)

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9 BEFORE: THE HONORABLE SUZANNE BARNETT

10 THE HONORABLE JESSE M. FEDER

11 THE HONORABLE DAVID R. STRICKLER

12

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20 VOLUME VIII

21

22

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24 Karen Brynteson, RMR, CRR, FAPR

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1 P R O C E E D I N G S

2 (9:06 a.m.)

3 JUDGE BARNETT: Shall we march on?

4 Get it?

5 Mr. Cho.

6 Whereupon--

7 GREGORY CRAWFORD,

8 a witness, called for examination, having previously
9 been duly sworn, was examined and testified further
10 as follows:

11 CROSS-EXAMINATION

12 BY MR. CHO:

13 Q. Good morning, Dr. Crawford.

14 A. Good morning.

15 Q. My name is Dustin Cho, and I represent
16 the Public Television Claimants.

17 A. Nice to meet you.

18 Q. The last time I was up here with a
19 witness that spilled over from the day before,
20 she wanted to start by elaborating or
21 clarifying some of her testimony. So I thought
22 I should give you the same opportunity first.
23 Is there anything you want to elaborate or
24 clarify from the day before? Of course, it is
25 perfectly fine if you don't wish to.

1 JUDGE BARNETT: I'm sorry; before we
2 even ask the question. With regard to
3 Mr. MacLean's oral motion yesterday, this is
4 not something we can handle unless we have it
5 in writing.

6 MR. MacLEAN: You Honor, we filed our
7 motion in writing this morning, taking your
8 hint from yesterday. And so it's -- it's been
9 filed.

10 JUDGE BARNETT: Thank you very much.

11 MR. STEWART: Your Honor, we are
12 responding in writing, as well.

13 JUDGE BARNETT: I appreciate that.
14 And that having been said, of course, we are
15 going to complete Dr. Crawford's testimony and
16 make the decision after the fact, as we have
17 done at times in the past.

18 Now, I'm sorry, Mr. Cho -- oh,
19 Mr. MacLean, you have an objection to the
20 question?

21 MR. MacLEAN: Yes, your Honor. The
22 question is broad and vague and basically
23 allows the witness to question himself. I'd
24 ask that the question be something that we can
25 understand and respond to, without simply

1 opening the floor to the witness.

2 MR. CHO: Your Honor, I am just asking
3 the witness to clarify his remarks, if he
4 wishes to do so.

5 JUDGE BARNETT: Overruled.

6 THE WITNESS: So I have nothing to say
7 at this time -- I have nothing to say at this
8 time.

9 BY MR. CHO:

10 Q. Well, one thing I do want to clear up
11 at the outset -- I don't know if we can pull up
12 Slide 1. Yesterday, you agreed with
13 Mr. MacLean that this issue was very important,
14 and so I want to touch on this right away.

15 Mr. McLean repeatedly suggested that
16 the minimum fee might be calculated on a
17 subscriber group basis rather than on a
18 systemwide basis, as you had testified. And on
19 the screen is an excerpt from Exhibit 4009,
20 which is the testimony of Jonda Martin, the
21 President of Cable Data Corporation. And she
22 states, "Only the minimum fee should be
23 calculated on a systemwide basis without
24 reference to subscriber group." Is that
25 consistent with your testimony yesterday?

1 A. Yes, it is.

2 Q. And in fact, if we view the next
3 slide, if you look at the Statement of Account
4 form, Form 3, that is attached to Exhibit 4009
5 at page 39, it is clear from Form 3 that the
6 minimum fee is calculated on a systemwide
7 basis, as you testified; right?

8 A. That's correct. And this is the form
9 I was familiar with in my memory.

10 Q. Thank you, Dr. Crawford.

11 JUDGE FEDER: Dr. Crawford, is your
12 mic on?

13 THE WITNESS: I don't know. I will
14 move it a little closer.

15 BY MR. CHO:

16 Q. So I want to start out by looking at
17 Figures 11 and 12 of your Direct Testimony on
18 page 25. Do you have that in front of you?

19 A. I see the image on the screen, yes.

20 Q. So Figure 11, which is at the top of
21 the slide, shows each Claimant group's share of
22 the minutes of their programming that were,
23 broadcast multiplied by the number of distant
24 subscribers who receive that programming;
25 right?

1 A. Weighted by the total subscribers at
2 the system level -- or at the subscriber group
3 level. Excuse me.

4 Q. Right. So I guess that is sort of
5 what my question is trying to get at. It is
6 the minutes of the programming that were
7 broadcast multiplied by -- and that is the
8 weighting -- multiplied by the number of
9 distant subscribers receiving that program. Is
10 that how the weighting is done?

11 A. Yes, that's correct.

12 Q. So, for example, if there is a station
13 that carried only 1,000 subscribers on a
14 distant basis and one minute of that station
15 programming is transmitted to those 1,000
16 subscribers, that counts as 1,000 distant
17 minutes for this table?

18 A. For this table, yes.

19 Q. Whereas, if it is a widely carried
20 station like WGN that goes to 40 million
21 distant subscribers, then 1 minute of WGN would
22 actually count as 40 million distant minutes on
23 this table?

24 A. That's correct.

25 Q. Figure 11, the one on the top, does

1 not account for the fact that most of the
2 programming minutes on WGN are non-compensable;
3 right?

4 A. That's correct. It reports the share
5 of total minutes.

6 Q. So then Figure 12, which is below
7 that, that shows the shares of only the
8 compensable distant minutes?

9 A. That's correct.

10 Q. And Program Suppliers and Devotional
11 shares of the minutes fall by nearly half?

12 A. Yes, I see that, yes.

13 Q. And everyone else's share actually
14 more than doubles?

15 A. That looks to be -- yes; correct.

16 Q. And is it your testimony that the
17 Public Television category accounted for
18 36.3 percent of the compensable distantly
19 retransmitted programming minutes that CSOs
20 chose to carry in 2010 through 2013?

21 A. When weighted by subscribers, yes.

22 Q. Did Public Television account for the
23 largest share of compensable distantly
24 retransmitted minutes during this period?

25 A. Yes.

1 Q. And from 2010 to 2013, there is a
2 marked increase in Public Television's share of
3 compensable minutes; is that right?

4 A. There is a modest increase. I mean,
5 it's maybe 10 percent over -- well, no -- yeah,
6 10 to 15 percent over the three-year --
7 four-year period.

8 Q. It goes from approximately 32 percent
9 in 2010 up to nearly 40 percent?

10 A. That's right. It's closer to
11 20 percent, excuse me.

12 Q. And you previously testified that --
13 if we could put up the next slide -- I think
14 you previously testified that Public
15 Television's type of programming is more likely
16 to be considered niche programming, therefore
17 is more profitable to cable systems than other
18 types of programming; right?

19 A. Could I see the full context?

20 Q. I believe -- oh, has this been moved
21 -- this is a Program Suppliers exhibit. Has
22 this been moved into evidence? 6047?

23 JUDGE STRICKLER: What is this
24 exhibit?

25 MR. CHO: This is his prior testimony

1 from 2004 to 2005 -- Dr. Crawford's prior
2 testimony from 2004 to 2005.

3 MS. PLOVNICK: I believe this
4 particular exhibit number hasn't been admitted
5 into evidence; however, I think it may have
6 been previously designated by somebody else.
7 So it may already be in the record with another
8 number, 40-something.

9 JUDGE BARNETT: Okay. Somebody in the
10 room designated Dr. Crawford's prior testimony.
11 Who are you and what number is it?

12 (Laughter.)

13 MR. COSENTINO: I think it is us, your
14 Honor. Let me find it.

15 JUDGE BARNETT: Thank you.

16 MR. CHO: I apologize.

17 JUDGE BARNETT: It's okay. It's just
18 we want to de-duplicate to the extent that we
19 can.

20 MR. COSENTINO: This is the 2004-2005?

21 MR. CHO: Yes, rebuttal.

22 MR. COSENTINO: Rebuttal of
23 Dr. Crawford? This is Tab A to Exhibit 4005,
24 which is the Direct Statement of Dr. George.

25 JUDGE BARNETT: And is 4005 previously

1 admitted?

2 MR. COSENTINO: Yes, it is, your
3 Honor.

4 JUDGE BARNETT: So it is already in
5 the record. So, Mr. Cho, if you could --

6 MR. CHO: We will try to find that
7 copy.

8 JUDGE BARNETT: -- mentally highlight
9 the Exhibit 6047 and refer to it, rather, as an
10 exhibit to -- rather, an appendage to
11 Exhibit 4005, the record will be clear, we
12 hope.

13 MR. CHO: Thank you very much, your
14 Honor. May I approach the witness?

15 JUDGE BARNETT: You may.

16 THE WITNESS: I'm sorry; I'm doing
17 damage to the binder here. Appendix A. Okay.
18 Yeah.

19 BY MR. CHO:

20 Q. It's also up on the screen.

21 A. If you don't mind, I'll look at the
22 full page.

23 Q. Of course.

24 A. Okay. I see the passage. Go ahead
25 with your question.

1 Q. My question is that you previously
2 testified that Public Television's type of
3 programming is more likely to be considered
4 niche programming and is, therefore, more
5 profitable to cable systems than other types of
6 programming; is that right?

7 A. Yes, that's what I testified
8 previously.

9 JUDGE STRICKLER: You say in your
10 testimony that we are looking at that that is a
11 result of your research. The sentence begins,
12 "My research" closed quote. Then there is a
13 footnote. Do you then reference the research
14 in Exhibit --

15 THE WITNESS: The research I believe
16 is cited in the paragraph above, where it says,
17 "The second condition, negative correlation,
18 can in a recent article published in
19 Quantitative Marketing and Economics."

20 JUDGE STRICKLER: Can we blow that up?
21 I'm just trying to find that.

22 MR. CHO: Oh, I don't have a paper
23 copy.

24 JUDGE STRICKLER: We will get up to
25 speed and get it easier to read.

1 MR. CHO: This is the downside of
2 using electronic versions.

3 JUDGE BARNETT: Well, if there is an
4 earthquake, we won't be buried.

5 (Laughter.)

6 MS. PLOVNICK: You could use 6047 in
7 paper and put it on the ELMO and we'll just
8 pretend it's the other exhibit.

9 JUDGE BARNETT: Just like bankruptcy
10 courts have jurisdiction. You learn to
11 pretend.

12 (Laughter.)

13 BY MR. CHO:

14 Q. So I have up page 10 of what I believe
15 is somewhere in this Exhibit 4005, and the
16 footnote -- is that Footnote 24?

17 JUDGE STRICKLER: I think the witness
18 did not agree with me that it was in the
19 footnote. I thought he said it was in the
20 sentence.

21 THE WITNESS: The footnote is
22 referring to the same paper in the previous
23 paragraph. So The same reference.

24 JUDGE STRICKLER: Okay. Why don't we
25 start from the top and go back to your

1 testimony. Let's go to the sentence you were
2 talking about. Where is that?

3 THE WITNESS: Sure. I think it was
4 the previous paragraph. A little bit higher.

5 JUDGE STRICKLER: "The second
6 condition..."?

7 THE WITNESS: That one.

8 JUDGE STRICKLER: And that first
9 sentence suggests that we should be going back
10 even further, doesn't it? "The second
11 condition, negative correlation, can..."

12 THE WITNESS: If you like, I can
13 summarize. Or we could go back.

14 JUDGE STRICKLER: Please.

15 THE WITNESS: So this is research that
16 was looking to explore the economic incentives
17 of cable systems to bundle cable networks. And
18 one of the theories -- the ideas of the theory
19 of bundling is that it makes tastes more
20 homogenous and this can be profitable to cable
21 systems, and it is widely believed to be one of
22 the reasons that cable systems bundle.

23 This homogenizing account effect is
24 stronger if there is negative correlation
25 between the case for a given cable network and

1 the other elements in the cable bundle. So,
2 therefore, the profitability effect is stronger
3 if there is this negative correlation. So that
4 is what this second condition says.

5 And in both my direct and rebuttal
6 testimonies in this proceeding, I mentioned
7 that there is a bundling premium associated
8 with programming that can appeal to niche
9 cases.

10 JUDGE BARNETT: Thank you.

11 DR. CRAWFORD: Of course.

12 BY MR. CHO:

13 Q. And, in fact, you give examples in
14 that paper of particular channels or types of
15 programming that are represented -- or are
16 similar types of programming to Commercial
17 Television Claimant programming, Joint Sports
18 Claimant programming, and Public Television
19 programming; is that right?

20 A. Let me see the example. Yes, I do.

21 Q. Thank you. If we could go back to the
22 slides. Let's look at Figure 13 on page 26 of
23 your Direct Testimony, Exhibit 2004. In this
24 table, are you showing the average number of
25 distant Public Television stations in each

1 subscriber group broken down to show the
2 differences between different cable operator
3 MSOs?

4 A. Yes, that's what the table shows.

5 Q. And if you look at the bottom right
6 cell where it says .44, does that mean that
7 across all the cable operators in 2010 to 2013
8 the average distant subscriber group carried
9 .44 distant Public Television stations?

10 A. That's correct.

11 Q. And the 22 percent number below that,
12 does that mean that the Public Television
13 stations accounted for 22 percent of the
14 distant signals per subscriber group on
15 average?

16 A. That's correct.

17 Q. Now, in your testimony you observe
18 that there is an upward trend in both the
19 number and the share of distant stations that
20 are Public Television stations during 2010
21 through 2013; right?

22 A. Yes.

23 Q. Is that upward trend for Public
24 Television reflected in this far-right column?

25 A. I mean, the far-right column is the

1 average over the four-year period, so it would
2 not reflect a trend within the period.

3 Q. Well, the first row shows .41.

4 A. Oh, I see, I'm sorry. I thought you
5 meant -- yes, the final column reflects the
6 upward trend.

7 Q. Thank you. So in your testimony, you
8 also observe that since 2004-2005 -- the
9 2004-2005 decision -- there have been two new
10 entrants to the cable television industry;
11 right?

12 A. That's right.

13 Q. And those two new entrants were AT&T
14 and Verizon?

15 A. That's correct.

16 Q. And those two entrants quickly grew to
17 be among the largest pay TV providers in the
18 United States by 2013?

19 A. According to -- yeah.

20 Q. I don't have a slide for it, but I
21 believe it's Figure 7 on page 19 of your
22 testimony.

23 A. Maybe we just look at that before I --

24 Q. Okay.

25 A. -- before I confirm without seeing the

1 numbers.

2 Q. I believe on Figure 7, page 19, you're
3 showing the top MVPDs by share of the total
4 MVPD subscribers. We will try to bring it up.
5 Page 19.

6 A. So, can you repeat?

7 Q. My question is, those two entrants,
8 the AT&T and Verizon entrants, grew to be among
9 the largest pay TV providers in the U.S. by
10 2013?

11 A. That's correct.

12 Q. And, in fact, if we look at the right
13 column of this Table 2013, Comcast -- that's a
14 cable provider; right?

15 A. Yes, that's a cable priority.

16 Q. And then the next two, DirecTV and
17 Dish, those are satellite providers?

18 A. Yes.

19 Q. And then after that is Time Warner,
20 AT&T, and Verizon?

21 A. That's correct.

22 Q. So if we go back to my slide --
23 sorry -- Verizon alone actually accounted for
24 more than 17 percent of the royalties paid in
25 2013, according to the next -- yes -- sorry.

1 If we could go to Figure 5 on page 17. Thank
2 you. So Verizon alone actually accounted for
3 more than 17 percent of the royalties paid in
4 2013, just Verizon?

5 A. That looks -- if I do the math of 108
6 divided by 744, that looks to be approximately
7 right.

8 Q. And, in fact, if you look on the
9 bottom line, Verizon alone accounted for about
10 14 percent of the total royalties paid for the
11 full four-year period?

12 A. That's correct.

13 Q. So did Verizon carry significantly
14 more Public Television stations than the other
15 MSOs during this period?

16 A. That's my understanding.

17 Q. Yeah. And on average, did Verizon
18 carry 1.38 distant Public Television stations
19 to each of its subscriber groups?

20 A. As reported in my Figure 13, yes.

21 Q. I got it from your Figure 13. So
22 Public Television stations actually accounted
23 for more than half, that's that 53 percent
24 number, of the average number of total distant
25 stations that Verizon carried to its subscriber

1 groups?

2 A. I'm just reading the footnote to make
3 sure I say the right thing. Yes, that appears
4 to be correct, 52 percent of the distant
5 stations choose -- Verizon subscriber groups
6 were PTV stations.

7 Q. Now, you mentioned yesterday that you
8 were familiar with the Bortz survey; right?

9 A. I am familiar in the sense that I read
10 the results, but I did not do a detailed
11 analysis of the entire study.

12 Q. Are you aware that in all four years,
13 the Bortz surveys never surveyed a single
14 Verizon system that carried any distant Public
15 Television signal?

16 A. I'm not aware of the Bortz survey to
17 that level of detail.

18 Q. Is it possible in your opinion that
19 that omission -- just assuming that that
20 omission is true -- is it possible that that
21 could have biased the Bortz survey against
22 Public Television?

23 A. I'm sorry; I don't feel confident to
24 comment on whether the Bortz survey would be
25 biased. I haven't analyzed it carefully.

1 Q. Well, okay. Now, the Bortz surveys
2 focused their analysis on sampling and
3 surveying entire cable systems. But even just
4 among the largest MSOs, there can be
5 substantial differences in the size and
6 complexity of cable systems; right?

7 A. Yes, that's true.

8 Q. Let's first talk about size. For
9 example, in Figure 8, which is up on the
10 screen, you show that the size of the average
11 Charter system is about 35,000 subscribers,
12 whereas the average size of the Verizon system
13 is more than 270,000 subscribers.

14 A. That's correct.

15 Q. But at the same time, Charter and
16 Verizon actually had similar numbers of total
17 subscribers during the 2010 through 2013
18 period?

19 A. Okay. That seems consistent with the
20 figure you presented there.

21 Q. On average, Verizon had about 15 cable
22 systems during this period, doing the math.

23 A. Verizon is known for having very large
24 cable systems.

25 Q. And on average, Charter had more than

1 100 systems during this period, just dividing
2 3.9 million by 35,000?

3 A. That's correct.

4 Q. So Charter systems were much smaller,
5 on average, than the Verizon systems?

6 A. Yes, that seems to be true.

7 Q. And according to your Figure 8, the
8 average size of the Comcast, Time Warner, Cox,
9 and AT&T cable systems were somewhere between
10 the Charter and Verizon systems on average?

11 A. Yes, that's correct.

12 Q. And the other MSOs, the other column
13 toward the right, on average had cable systems
14 with fewer subscribers than the six that you
15 just set out?

16 A. That's correct.

17 Q. All right. Well, that covers the
18 size, but I want to talk about the complexity
19 of the cable systems distant signals. And for
20 the most part, the largest systems did not
21 carry the same set of distant signals to all of
22 its subscribers in their system; is that right?

23 A. Well, I don't know if that's right,
24 actually. I mean, I didn't -- I didn't break
25 down the -- this Figure 10 which shows the

1 number of subgroups by system size. So I don't
2 know if that's true.

3 Q. Okay. Well, different subscriber
4 groups within the same system received
5 different sets of distant signals; right?

6 A. Yes.

7 Q. And -- well the Bortz survey and the
8 Horowitz survey and the Israel regression, they
9 stop at the level of the cable system as a
10 whole and they don't go deeper; is that right?

11 MR. STEWART: Your Honor, I object
12 again to further questions of this witness
13 about the Bortz survey. He said that he hasn't
14 studied it.

15 MR. CHO: Your Honor, he's said that he
16 is generally familiar. I don't know exactly
17 how familiar he is. But my question is -- this
18 is a pretty high-level question.

19 JUDGE BARNETT: This is not a specific
20 question about the Bortz survey, but I agree
21 with you, Mr. Stewart, that we don't need
22 further questions on the specifics of the Bortz
23 survey, since the witness has said he is not
24 familiar with the details of it. But that
25 question is acceptable. You may answer.

1 THE WITNESS: Thank you. Although I
2 think I will divide up my answer. I am
3 familiar that the Israel regression was at the
4 system level; I think I knew that the Bortz
5 survey was at the system level; but I'm not at
6 all familiar with the Horowitz survey.

7 BY MR. CHO:

8 Q. Well, let's talk about what you did.
9 You actually dug deeper and analyzed these
10 subscriber groups within each system; is that
11 right?

12 A. That's correct.

13 Q. And that detailed subscriber group
14 data has actually never been available before
15 or used in any prior proceeding -- or any prior
16 regression previous to this proceeding; is that
17 right?

18 A. There were two questions in there. So
19 my understanding is that subscriber groups were
20 available in previous proceedings. But I don't
21 believe that they were used in previous
22 regressions in previous proceedings.

23 Q. And the richness of your dataset
24 allowed you to control for system level fixed
25 effects, even within the same accounting

1 period; right?

2 A. That's correct.

3 Q. And because of your rich data, at the
4 same time you were also able to provide more
5 precise estimates with tighter confidence
6 intervals than any previous regression in these
7 proceedings; right?

8 A. Well, I mean, any previous regressions
9 in these proceedings is fairly broad. So I'm
10 familiar with the Waldfogel regression and my
11 confidence intervals were tighter than the
12 Waldfogel regression.

13 Q. Did you review the Ralston regression?

14 A. I reviewed it for the previous
15 proceeding, but I did not review it for this
16 proceeding.

17 Q. I see. So you didn't re-review it in
18 preparing your testimony here?

19 A. Yes.

20 Q. Understood. But your regression has
21 tighter confidence intervals than that
22 regression, as well; is that right?

23 A. Yes -- oh, than that regression? I'm
24 not sure. I reviewed it so long ago, I don't
25 really remember.

1 Q. So according to the bottom of your
2 Figure 10, there were some cable systems that
3 had more than 20 different subscriber groups?

4 A. That's correct.

5 Q. Do you know whether larger cable
6 systems, which accounted for more of the
7 royalty payments -- that's what I mean by
8 larger -- on average had more subscriber groups
9 than smaller cable systems?

10 A. I don't know.

11 Q. Well, a different question;
12 Mr. MacLean asked about the first row on this
13 table. And is it true that on average the
14 smaller systems that paid the least royalties
15 fall into this category of having only one
16 subscriber group?

17 A. So again, I don't know how this table
18 correlated with the size of the system.

19 Q. Okay. Well, by my calculation, the
20 largest 50 systems by royalty payments in the
21 last accounting period of your study averaged
22 more than 15 subscriber groups per period. Is
23 that consistent with what you observed?

24 A. Well, I mean, I haven't observed it,
25 but -- so I can't comment one way or the other

1 whether that is true.

2 Q. Well, one thing I do want to clear up
3 from yesterday. Mr. MacLean yesterday
4 suggested that a system paying a minimum fee
5 would not have any reason to have multiple
6 subscriber groups. But now that we clarified
7 earlier this morning that the minimum fee
8 actually only applies on a systemwide basis, as
9 you consistently testified, isn't it actually
10 the case that cable operators would have an
11 incentive to use subscriber groups to pack all
12 the communities that have the highest demand
13 for distant signals into one subscriber group
14 that receives maybe more than one DSE, and then
15 put the rest in a subscriber group that gets
16 fewer than one DSE in order to pay the minimum
17 fee for the system as a whole?

18 A. So that's not my -- that's not how I
19 usually think of how the cable operator would
20 select the distant signals to carry in
21 subscriber groups.

22 Q. I guess I'm just asking at a
23 theoretical level, if a cable operator that is
24 trying to reduce its cable fees might use
25 subscriber groups to actually fall within the

1 minimum fee while importing distant signals?

2 Is that possible?

3 A. Could you maybe elaborate a little bit
4 more on the scenario you see?

5 Q. Sure. For example, a cable system
6 might want to gerrymander its borders or create
7 different subscriber groups within a system, so
8 that maybe there is a section that's a major
9 city that doesn't need to import a lot of
10 distant signals and a more suburban or rural
11 community all connected, and they have
12 discretion to draw the borders of their cable
13 system. And then they could have a subscriber
14 group out there that gets two DSEs and the
15 large subscriber group in the city that gets
16 zero DSEs, and they end up paying the minimum
17 fee?

18 A. I mean, that's possible. But I have
19 no evidence for it.

20 Q. Mr. MacLean also asked you yesterday
21 about -- about an implied coefficient for Big
22 Three network nonduplicated network
23 programming. Do you recall that?

24 A. I do.

25 Q. And I think you gave him three reasons

1 why -- why his interpretation of that, what he
2 felt was an implied coefficient, is not really
3 valid. And I'll restate, and you can correct
4 me if I am wrong --

5 A. Do, please.

6 Q. I believe, one, you said that that
7 variable actually wasn't significant. Two, it
8 combined multiple things that were off-air
9 minutes plus Big Three nonduplicated network
10 minutes. So all those minutes were just
11 combined in one variable. And third, it was an
12 effects regression, and so you can't really
13 interpret a variable that the effects
14 regression wasn't designed to actually have an
15 interpretable coefficient for; is that right?

16 A. So that sounds -- without looking at
17 the specific transcript, that sounds broadly
18 consistent with my testimony from yesterday.

19 Q. I just want to follow up on that last
20 part about the effects regression being -- I
21 think that there may be a reason why stations
22 -- and I think you touched on this yesterday --
23 there is maybe a reason why stations that are
24 importing nonduplicated Big Three network
25 programming might be different from other

1 stations in the population; is that right?

2 A. You mean systems importing?

3 Q. Oh, I'm sorry, systems, yes.

4 A. Might be different from other systems
5 in the population?

6 Q. Exactly. Or subscriber groups, I
7 guess is the more relevant.

8 A. Yes, I could imagine that there are
9 probably much smaller systems. If it is a
10 system that is importing nonduplicated Big
11 Three network programming, then presumably it
12 doesn't have its own Big Three network
13 programming locally. And to me, this suggests
14 that they are probably small systems.

15 Q. In fact, there might be all sorts of
16 what you would call unobserved heterogeneity or
17 differences between subscriber groups that need
18 to import a Big Three network station versus
19 all of the other systems. And that, in fact,
20 that omitted variable bias might be captured
21 within this variable that Mr. MacLean was
22 trying to interpret as just reflecting the
23 value of Big Three nonduplicated network
24 minutes?

25 A. So I disagree strongly with that

1 characterization. Shall I elaborate?

2 Q. Yes, please.

3 A. So I think if different systems or
4 subscriber groups are importing different
5 distant signals, they're doing so to reflect
6 the value they have for the programming.
7 That's not an omitted variable; that's an
8 included variable. So they are selecting the
9 distant stations to carry and the regression
10 measures the value of the different minutes of
11 programming. So it's not omitted.

12 Q. I didn't mean to say -- I was not
13 saying this would bias the coefficients of
14 interest for the minutes that you actually
15 designed your regression to interpret. I'm
16 sorry if I was unclear.

17 I was just saying if Mr. MacLean is
18 trying to interpret the coefficient for -- you
19 know, the implied coefficient that he created
20 for a Big Three nonduplicated network minute,
21 that variable is actually capturing potentially
22 any differences that a system might have that
23 decides that it needs to import a Big Three
24 network; isn't that right?

25 A. Well, I dispute the value of the

1 premise for the reasons I gave Mr. MacLean
2 yesterday --

3 Q. Right.

4 A. -- of investigating the consequences
5 of this coefficient. So -- but putting that
6 aside, if you could repeat again -- I wanted to
7 get that out first -- and if you can repeat
8 again your question, I am happy to consider,
9 sort of pursue it even absent -- because of the
10 first two considerations, to pursue
11 investigations on the third.

12 Q. I guess what I'm really getting at is
13 since you didn't design your regression to try
14 and have an interpretable coefficient to
15 measure the value of nonduplicated Big Three
16 network programming, you didn't try and account
17 for all of the control variables that would be
18 needed to actually have an interpretable
19 coefficient for that. And you wouldn't need
20 to, because what you are trying to do is
21 interpret the effects of these minutes of the
22 six categories of programming, which do not
23 include Big Three network programming.

24 A. So -- so I disagree with this. So, I
25 mean, the purpose of the proceeding is to

1 measure the relative value of the Claimant
2 categories. But it does show in my regression,
3 as I described to Mr. MacLean yesterday, by
4 including the total minutes that measures these
5 relative to the value of -- in the nonduplicate
6 analysis -- the pool of nonduplicated network
7 programming and off-air programming.

8 And so, in fact, the regression does
9 measure also the -- implicitly, the value of
10 this pool of off-air and nonduplicated network
11 programming.

12 Q. Exactly. That's what I was trying to
13 get. Thank you. And I guess my point is,
14 then, you don't need to worry about trying to
15 have the regression as an interpretable Big
16 Three network coefficient, because the purpose
17 of that variable would be entirely different?

18 A. Well, I mean, the -- I mean, we don't
19 use that coefficient in the actual royalty
20 shares. But it's part of the calculation that
21 goes into the calculation of the royalty shares
22 for the other -- for the Claimant categories.

23 Q. Let's talk about another feature, the
24 quality of your data. So some other studies in
25 this proceedings, which will go unnamed, don't

1 try to survey every single cable system in
2 every year. Those surveys rely on samples or
3 the other studies rely on samples; is that
4 right? The Bortz survey, you probably know,
5 does rely on samples; right?

6 A. I am familiar enough with the Bortz
7 survey to understand that it relies on samples.

8 Q. And each of those surveys actually
9 involve fewer than 100 unique respondents; do
10 you know?

11 A. I did not know that.

12 MR. MacLEAN: Objection. Outside the
13 scope of Direct.

14 JUDGE BARNETT: Sustained. Although I
15 think that objection belongs to the party
16 presenting the witness.

17 (Laughter.)

18 MR. STEWART: I agree with Mr. McLean.
19 That's the last time I'm going to say that.

20 (Laughter.)

21 MR. CHO: Your Honor, one of the key
22 issues in this proceeding will be, you know,
23 the extent to which Dr. Crawford's survey -- I
24 mean Dr. Crawford's study corroborates or does
25 not corroborate the Bortz survey. So I am

1 going to ask some questions, if I may, about
2 the Bortz survey. But I can ask in a
3 hypothetical, if he is not familiar with the
4 details of the Bortz survey.

5 JUDGE BARNETT: You can ask about the
6 results of the Bortz survey and, if he knows,
7 he can answer. Otherwise, it would have to be
8 a hypothetical question.

9 MR. CHO: Understood. Thank you.

10 BY MR. CHO:

11 Q. In the past, the regression analyses
12 in these proceedings have relied on samples as
13 well; is that right?

14 A. Samples is a broad term. So in some
15 data in some settings, they relied on the
16 population of the systems, but perhaps samples
17 of the programming. So -- the answer varies
18 depending on the variable that we are talking
19 about.

20 Q. Well Dr. Waldfogel's regression we've
21 seen relied on a sample of only three weeks of
22 programming data from each accounting period;
23 right?

24 A. That's my understanding for the
25 programming data, yes.

1 Q. And unlike that study, your study did
2 not rely on sampling; correct?

3 A. That's correct.

4 Q. In fact, you used the entire
5 population of programming on all the distant
6 signals for all four years?

7 A. That's correct.

8 Q. And unlike the sample-based survey,
9 your regression is able to systematically
10 account for all the programming that was
11 transmitted to all the subscriber groups in the
12 four-year period?

13 A. That's correct.

14 Q. So it's actually impossible for your
15 study to suffer from a bias like nonresponse
16 bias?

17 A. The word "nonresponse bias" would not
18 be relevant for the environment that my study
19 applies.

20 Q. Right. Because your study actually
21 captures all of that data. You are not
22 surveying anyone. There is no respondent.

23 A. Exactly. There is no respondent.

24 Q. And another feature of your study is
25 that you actually are able to take into account

1 non-compensable programming; right?

2 A. Yes.

3 Q. In fact, your regression is able to
4 fully control for non-compensable programming
5 and doesn't attribute any value to that
6 non-compensable programming for any Claimant
7 group; right?

8 A. You misstated a little bit. So in the
9 regression, if the non-compensable programming
10 has a value to the cable operator, then it
11 informs the regression coefficient. But then,
12 once I have the regression coefficients, of
13 course. I only apply them to the compensable
14 programming.

15 Q. My question, I believe I said, was you
16 don't attribute any value to the
17 non-compensable programming for any Claimant
18 group?

19 A. That I agree with. I didn't know that
20 the previous question said exactly that.

21 Q. In your report you offer two different
22 versions of your regression analysis; right?

23 A. That's correct.

24 Q. Your initial analysis and then what
25 you called the nonduplicate analysis?

1 A. That's right.

2 Q. In your nonduplicate minutes analysis
3 you removed all of the value for all duplicated
4 programming; right?

5 A. I mean, I reviewed -- I removed from
6 the data duplicated network programming.

7 Q. When you say "duplicated network
8 programming," you're not restricting that to
9 the Big Three networks though. You actually
10 included all types of programming from --

11 A. From networks. That's correct. It
12 wasn't just the Big Three networks. As I
13 mentioned in my Direct Testimony, Fox was
14 included, PBS, Univision, et cetera.

15 Q. And the only basis for your decision
16 to remove 100 percent of the value for
17 duplicated minutes is your intuition that
18 duplicated programming had zero value for cable
19 system operators?

20 A. So let me -- I'm going to contest the
21 premise and then ask you to ask the question
22 again, because I think you mischaracterized.
23 When I remove the duplicated minutes -- so the
24 minutes of duplicated programming, so the way I
25 think about it is that the minutes of that

1 duplicated programming has no value to cable
2 operators.

3 When I include it in the initial
4 analysis, then I'm basically measuring an
5 average value of programming which includes the
6 value of nonduplicated programming, the
7 positive value for nonduplicated programming
8 and a zero value for the duplicated
9 programming.

10 When I then remove the duplicated
11 programming, of course you are only left over
12 with the nonduplicated programming that has
13 positive value. So, of course, the value per
14 minute of that programming comes higher because
15 we are no longer averaging in a bunch of zeros.

16 So I don't take away any of the value
17 of the programming, because I take away -- so
18 the programming that remains has higher value
19 because it's not being averaged with a bunch of
20 zeros. So there is no removal of the value of
21 the programming from any Claimant category.

22 Q. Well, let me ask my question again --

23 A. Please.

24 Q. -- and see if you are able to respond.
25 The only basis for your decision to remove

1 100 percent of the value from the duplicated
2 minutes is your intuition that the duplicated
3 programming has zero value to cable operators?

4 A. I don't remove 100 percent of the
5 value from duplicated minutes. So -- oh -- I
6 -- I -- the premise behind the analysis is that
7 the duplicated minutes have no value. So --
8 but putting aside that disagreement with the
9 beginning of your question, I am happy to
10 answer the second half of your question, which
11 is that because of this idea that duplicated
12 programming is a perfect substitute for
13 existing programming and it, therefore, would
14 have no value to the cable operator, and so I
15 guess my justification for this is that it's a
16 bit of an extension of the network
17 nonduplication rules to networks outside the
18 Big Three. So it basically captures this idea
19 that programming on networks that duplicates
20 programming that is already in the local market
21 has no value to the cable operator.

22 Q. Well, does the network non-duplication
23 rule imply that the cable operators do not
24 value duplicated network programming?

25 A. My understanding of the rules is that

1 the local station that has exclusive rights to
2 the programming can ask the cable operator to
3 blackout that programming. And if it's blacked
4 out programming, I assume it has no value. In
5 fact, it may even have negative value.

6 Q. But the rule, actually, doesn't --
7 isn't derived from cable operators' preferences
8 or their valuation. It's a rule; right?

9 A. It's a rule. And I'm not even deeply
10 familiar with the specific rationale for the
11 rule. But from an economist perspective, when
12 I see the rule and say why does that rule make
13 sense, I think it is meant to protect local
14 broadcasters that have an exclusive right to
15 programming to have the identical programming
16 present on another signal and, since it is a
17 perfect substitute, some consumers might
18 otherwise go to that signal. And so they --
19 because they are perfect substitutes and so
20 then it is blacked out.

21 Q. But is it your opinion that that rule
22 is, in fact, a reflection that that cable
23 operators do not value the distant duplicated
24 network programming?

25 A. From a cable operator's perspective,

1 they want to have a program for the consumers;
2 right? And so once they have it on one signal,
3 what is the point of having it on another
4 signal?

5 Q. And the rule, in fact, doesn't apply
6 to any networks other than the Big Three
7 networks?

8 A. That's my understanding.

9 Q. Have you ever discussed with any cable
10 operator whether or not duplicates have any
11 value?

12 A. I have not.

13 Q. And you don't cite any literature or
14 evidence beyond that intuition?

15 A. No, I don't.

16 Q. In fact, is it possible that cable
17 subscribers develop brand loyalty to a
18 particular station and like to continue to
19 watch the same channel, both for its unique
20 programming as well as its network programming?

21 A. I mean, I do believe stations
22 potentially develop brand loyalty in general,
23 yes.

24 Q. And do you think it's possible that
25 some viewers might want to continue to watch

1 the same channel that they consistently watch?

2 A. But I think the viewing of distant
3 signals is so tiny, relative to the viewing of
4 local stations, that I think -- I can imagine
5 the idea of brand loyalty for a local station,
6 but I think the concept, while relevant for
7 what might be large stations within a market,
8 is probably less relevant for these smaller
9 distant signals.

10 Q. And the only basis for that is your
11 intuition?

12 A. My analysis of the likely forces
13 within the market.

14 Q. But there's no -- you can't point to
15 any evidence?

16 A. That's correct.

17 Q. So to the extent that there may be
18 some value to network programming brand
19 loyalty, whatever it might be, would you agree
20 that if you were imposing that all Public
21 Television programming has -- duplicated Public
22 Television programming has zero value, that the
23 implied share for Public Television in your
24 nonduplicate minutes analysis is conservative
25 as to Public Television?

1 A. No -- no, because if you recall, by
2 taking out those minutes -- suppose for the
3 minute -- suppose I agreed with your premise
4 that those minutes didn't have zero value, but
5 some slight nonzero value. In the -- by virtue
6 of taking them out, I measure a higher value --
7 so and let's continue the premise that the
8 value to cable operators of nonduplicate PTV
9 programming is higher than whatever this slight
10 value.

11 Then by virtue of taking out the
12 duplicate programming, what I am estimating is
13 this higher value of the other minutes. And so
14 it would be absolutely inappropriate to apply
15 that higher value, which was estimated on data
16 associated with nonduplicate programming, and
17 then applying it to the programming minutes I
18 dropped in the duplicate analysis. That would
19 be a mistake.

20 Q. I very much agree with you. But my
21 question is really that if you -- if there were
22 some value, as you were saying in this
23 hypothetical, if there was some value to Public
24 Television duplicated minutes that is slightly
25 above zero, at least, then the shares that you

1 compute in your duplicate analysis would be
2 conservative as to Public Television. We can
3 see that between your initial analysis and the
4 Public Television analysis there is a gap.

5 A. There is a gap in -- so let me say the
6 initial analysis didn't drop the duplicate
7 minutes. And so the initial analysis would
8 capture whatever is this value of both the
9 duplicate and nonduplicate minutes. But it did
10 not need to -- none of the coefficients needed
11 to go any particular direction once one takes
12 away the duplicate minutes.

13 So it just -- it happened -- because
14 what is happening when you take away the
15 duplicate minutes you get a higher average
16 value per minutes. And then for some program
17 categories, fewer minutes. So one number goes
18 up and one number goes down, and it could have
19 been higher or lower than the share estimate
20 from the initial analysis.

21 Q. But isn't it true that if there were
22 some value to those duplicated minutes, then
23 the shares would fall somewhere in between the
24 initial analysis and the nonduplicated minutes
25 analysis?

1 A. No, if there was some value, then the
2 results of the initial analysis would be the
3 germane results, because the initial analysis
4 includes those minutes.

5 Q. Now, I want to turn to looking at the
6 shares that you actually propose in your
7 nonduplicate minutes analysis which are on
8 Figure 20 of page 45.

9 A. Okay.

10 Q. What are the numbers in the
11 parentheses?

12 A. The numbers in the parentheses are an
13 estimate of the standard error for the
14 estimates.

15 Q. So to calculate a 95 percent
16 confidence interval for each of these point
17 estimates, you can multiply the standard error
18 by roughly two, and then add or subtract them
19 to each point estimate to get a confidence
20 interval?

21 A. That's true. That is how one gets
22 confidence intervals, in general.

23 Q. And you note that in Footnote 60. All
24 right.

25 A. Good.

1 Q. Now, I imagine that this may be fairly
2 sample arithmetic, but I will hand you a
3 calculator, if you would like, so you can use
4 it.

5 MR. CHO: May I approach the witness?

6 JUDGE BARNETT: Yes.

7 BY MR. CHO:

8 Q. Just to take an example, if you wanted
9 to calculate the confidence interval for 2010,
10 that first row, for Public Television, your
11 point estimate is 14 percent and the standard
12 error is 1 percentage point. So double it, it
13 is 2. So 2 is the 95 percent confidence
14 interval, plus or minus 2 percentage points; is
15 that right?

16 A. That's correct.

17 Q. So if you subtract 2 from 14 you get
18 12; you add 2 to 14, you get 16. So the low
19 end of the 95 percent confidence interval for
20 Public Television would be 12 percent and the
21 high end would be 16 percent?

22 A. That's correct.

23 Q. So if we go to the next slide, I have
24 done that arithmetic in the table. And I'm not
25 going to ask you to verify all of that right

1 now, but this slide is demonstrative. But is
2 this approach I described consistent with how
3 you would calculate 95 percent confidence
4 intervals?

5 A. It is, yes.

6 Q. In your rebuttal testimony,
7 Exhibit 2005, on page 19, you point out that
8 Dr. Gray's study must not actually reveal
9 relative values to CSOs because his estimated
10 shares were different from yours; right?

11 A. Well, that was -- I had many
12 objections to Dr. Gray's study. But one of the
13 objections was that if his did reveal relative
14 value, they should broadly corroborate my
15 study, which I do believe reveals relative
16 value.

17 Q. All right. On the next slide, I've
18 added the Bortz survey shares from page 3 of
19 Exhibit 1001.

20 MR. CHO: May I approach the witness?

21 JUDGE BARNETT: You may.

22 THE WITNESS: Thank you.

23 BY MR. CHO:

24 Q. And on this demonstrative, if the
25 Bortz survey share was outside of the

1 95 percent confidence intervals, I've marked it
2 in red. And just looking at -- and if you want
3 to look at the Bortz estimates, it's on page 3
4 of 1001.

5 And just looking at the Public
6 Television column, in every year the Bortz
7 estimates for Public Television are outside of
8 the 95 percent confidence intervals produced by
9 your regression; right?

10 A. There are a lot of numbers here, but I
11 think, yes, that's right.

12 Q. And, in fact, for the entire 2010 to
13 2013 period, the Bortz estimate for Public
14 Television is 5.1 percent. And how many
15 standard errors is that below your regression's
16 estimate for Public Television? We can do the
17 math together, if you like. So your point
18 estimate, I believe, was 17.02.

19 A. Okay.

20 Q. And the Bortz survey share for the
21 entire four-year period is 5.1 for Public
22 Television. So that is a difference of 11.92,
23 if my subtraction is correct.

24 A. Okay.

25 Q. And you would just divide 11.92 by



1 your standard error, 1.23, and according to my
2 math, that is 9.69 standard errors.

3 A. That sounds correct. Although I would
4 point out that, of course, both my estimates,
5 and I presume the Bortz estimates, are
6 estimates. And so I presume Bortz also has
7 standard errors.

8 Q. Yes, it has confidence intervals. I
9 think his Public Television confidence interval
10 is purportedly half a percentage point,
11 according to Mr. Trautman.

12 But if you were to adjust the Bortz
13 estimate to include systems that carry only
14 Public Television, per another witness'
15 testimony, Public Television's share would go
16 to about 8 percent. So in a hypothetical world
17 where Public Television's share is about
18 8 percent in a different study, would that
19 still be more than 7 standard errors below your
20 regression's estimate for Public Television?

21 A. Yes, a share of 8 percent would be
22 something on the order of 7 standard errors
23 below my estimate for Public Television.

24 Q. Now, when you are interpreting
25 standard errors -- 7 standard errors, that

1 would be on the lower bound on what I believe
2 would be a 99.999999997 percent confidence
3 interval. Does that sound roughly right?

4 A. That sounds approximately right.

5 Q. Would you also agree with me that in
6 every year the Bortz estimate for Program
7 Suppliers are outside of the 95 percent
8 confidence interval produced by your regression
9 analysis?

10 A. Yes, it looks like it.

11 Q. So, for example, in 2011 the Bortz
12 estimate for Program Suppliers is more than
13 6 standard errors higher than the estimate
14 produced by your regression?

15 A. I mean, we could do the math, but I
16 trust that you have done the math correctly.

17 Q. Thank you. Incidentally, are you
18 aware of any reason why the Bortz survey would
19 have estimated Program Suppliers' value in 2011
20 to be so much higher than 2010 or '12 or '13?

21 A. As I said earlier --

22 MR. STEWART: Objection.

23 JUDGE BARNETT: Sustained.

24 BY MR. CHO:

25 Q. Are you aware -- setting aside the

1 Bortz survey, are you aware of any reason
2 Program Suppliers' value might be, in 2011, so
3 much higher than 2010, '12 or '13?

4 A. I'm sorry; I missed that question.
5 Say that again, please.

6 Q. Are you aware of any reason why
7 Program Suppliers' share, relative market value
8 share, in 2011 should be so much higher than in
9 2010 or '12 or '13?

10 A. I mean, I can only report what my
11 study shows. And, I mean, I don't have the
12 point estimates in front of me, but -- I mean,
13 they go down a little bit over time. I mean, I
14 could look at my --

15 Q. Feel free.

16 A. Okay. I think I will. So I show sort
17 of a general decline in the Program Suppliers'
18 share over time in my recommended royalty
19 shares.

20 Q. In fact, it's a consistent decline.

21 A. A continuous decline.

22 Q. Now, the Bortz estimates for
23 Devotional programming are also significantly
24 above your regression's 95 percent confidence
25 interval in every year; is that right?

1 A. That's true.

2 Q. And the Bortz estimates for Canadian
3 programming are significantly below your
4 regression's 95 percent confidence interval in
5 every year?

6 A. That's true.

7 Q. That leaves Commercial Television and
8 Joint Sports. In two of the four years, the
9 Commercial Television's Bortz estimates are
10 within your regression's 95 percent confidence
11 interval; is that right?

12 A. Yes, that's correct.

13 Q. But in the other two years, the
14 Commercial Television's Bortz estimates are
15 outside your regression's 95 percent confidence
16 interval?

17 A. Outside, but fairly close.

18 Q. Fairly close. And for the Joint
19 Sports Claimants, their Bortz estimates are
20 within your 95 percent confidence interval in
21 every year?

22 A. That's true.

23 Q. Is it fair to say that there are
24 statistically significant differences between
25 the Bortz survey shares and the shares

1 estimated by your regression analysis?

2 MR. STEWART: Objection. Your Honor,
3 the witness has already indicated that he
4 believes that there must be standard errors
5 around the Bortz results and any questions
6 about the statistical difference would be
7 difficult.

8 JUDGE BARNETT: Sustained.

9 MR. CHO: You Honor, may I direct him
10 to the confidence intervals in the Bortz
11 surveys so that he may look at those?

12 JUDGE BARNETT: You may do that.

13 BY MR. CHO:

14 Q. I believe they are in the appendix --
15 one of appendices to 1001. Yes, it's toward
16 the very back on the last five pages. On page
17 D8 through D11 of Exhibit 1001, Mr. Trautman
18 reports confidence intervals.

19 A. So it's just the first table on each
20 of the pages?

21 Q. Yes, that is correct.

22 A. Okay. So repeat your question.

23 Q. So with that additional data, are you
24 able to answer whether it is fair to say that
25 there are statistically significant differences

1 between the Bortz survey shares and the shares
2 estimated by your regression analysis?

3 A. Can we come back to your table?

4 Q. Yes.

5 A. So it's -- so -- so I'm able to
6 make -- with my own analysis, I'm able to do
7 any hypothesis tests with respect to any single
8 number within my data. So if you ask me is a
9 particular number 9 standard errors below my
10 point estimate, I can say that.

11 When it involves comparing results
12 across studies using different datasets and
13 different techniques, it's not as comparable.
14 So I'm completely comfortable answering any
15 question, does any number lie within or outside
16 or relative to my confidence intervals. But in
17 terms of assessing whether -- that's the limit
18 of my comfort of what I am able to answer.

19 Q. Are you able to answer, just taking
20 this set of Bortz point estimates as a, you
21 know, hypothetical, are you able to answer
22 whether or not that set of numbers is
23 statistically significantly different from your
24 regression analysis?

25 A. So the midpoint of the Bortz

1 estimates, as you report on your table in front
2 of me, is, depending on year-end category,
3 outside the confidence intervals that I have
4 for my study.

5 Q. Setting aside the statistically
6 significant issue for a second, is it fair to
7 say that there are economically meaningful
8 differences between the Bortz survey shares and
9 the shares estimated by your regression
10 analysis, just assuming that these numbers are
11 the Bortz survey shares?

12 MR. STEWART: Objection as to the use
13 of the term "economically meaningful."

14 MR. CHO: The question is in within
15 the witness' experience, if he believes they
16 are, in his opinion, economically meaningful.

17 JUDGE BARNETT: That is sustained.
18 That's very fuzzy. If you can break it down
19 and ask it another way, Mr. Cho, have at it.

20 BY MR. CHO:

21 Q. Sure. So if you have an incredibly
22 large dataset -- for example I have done
23 analyses on voter registration datasets -- you
24 can get pretty much any variable that is
25 statistically significant, even if you wouldn't

1 think there was any theoretical reason to have
2 that data to be meaningfully different under a
3 particular variable. If you have a big enough
4 dataset, you can find statistical significance.
5 But that doesn't mean that it is important in
6 an economical or theoretical sense.

7 But the number could be -- it could be
8 because the coefficient could be very tiny or
9 very small. But when you have a big number
10 difference, that could be economically
11 meaningful, even if it is not statistically
12 significant; right?

13 So what I'm trying to get at is there
14 could be a difference between statistical
15 significance and economic significance; is that
16 right?

17 MR. MacLEAN: Objection.

18 MR. STEWART: I also have an
19 objection, your Honor.

20 JUDGE BARNETT: Mr. MacLean?

21 MR. MacLEAN: Objection. He
22 incorporated the same term as in the last
23 objection to the question. But my objection is
24 that counsel is testifying.

25 JUDGE BARNETT: Mr. Stewart?

1 MR. STEWART: And my objection is that
2 this purports to be a question about the
3 potential economic significance of the Bortz
4 survey results, as to which Dr. Crawford has
5 testified he hasn't studied the study itself.

6 MR. CHO: Your Honor, I'm not asking
7 him to assess the Bortz survey. I'm just
8 asking whether these numbers, taken
9 hypothetically, are economically different or
10 different in a meaningful way. And I'm going
11 to try and develop that idea so that he can
12 answer in whatever way he thinks is appropriate
13 in his opinion.

14 JUDGE BARNETT: I think he answered
15 the question with regard to statistical
16 significance.

17 MR. CHO: Yes. And I'm trying to ask
18 him about a different concept.

19 JUDGE BARNETT: Well, that's the
20 concept we're all having trouble with. I'm
21 going to defer to our Judge with the
22 significant economic knowledge and see if he is
23 familiar with the term and comfortable with the
24 question and the answer.

25 JUDGE STRICKLER: Well, are you asking

1 about the economic significance as
2 distinguished from the statistical
3 significance?

4 MR. CHO: Exactly.

5 JUDGE STRICKLER: Why don't you ask
6 the witness if he understands what you mean by
7 economic significance in this context, as
8 contrasted from statistical significance?

9 BY MR. CHO:

10 Q. Do you understand the difference
11 between economic significance in this context
12 as opposed to statistical significance?

13 A. To be honest, I don't.

14 (Laughter.)

15 JUDGE BARNETT: Sustained.

16 (Laughter.)

17 BY MR. CHO:

18 Q. In your testimony, you concluded that
19 the best method for estimating relative
20 marketplace value is regression analysis; is
21 that right?

22 A. I mean, in my testimony I said that
23 there are several appropriate methods and
24 regression is the one I used.

25 MR. CHO: If you could put up the

1 slide.

2 THE WITNESS: Okay.

3 BY MR. CHO:

4 Q. I believe this is page 3 of your
5 testimony. I think you concluded that the best
6 method for recovering relative marketplace
7 values is to apply a regression approach using
8 outcomes from the existing market; is that
9 right?

10 A. Yes, that's right.

11 Q. Thank you. I pass the witness.

12 JUDGE BARNETT: When I asked about
13 cross-examination yesterday, there was very
14 little response, although everyone did have an
15 opportunity, I think. Is there anyone else who
16 has questions for the witness, before
17 Mr. Stewart has redirect? Okay.

18 Mr. Stewart.

19 REDIRECT EXAMINATION

20 BY MR. STEWART:

21 Q. Good morning, Dr. Crawford.

22 A. Good morning.

23 Q. It's been a long time. I just had a
24 few questions for you.

25 First, with respect to the questions

1 that Mr. Cho just asked you with regard to
2 niche -- your testimony in a prior proceeding
3 about niche networks. Do you recall that?

4 A. I do.

5 Q. And I'm sorry that I don't remember
6 the number of the exhibit that we're
7 discussing, but he referred you to your prior
8 rebuttal testimony; correct?

9 A. That's correct.

10 Q. Do you have that in front of you?

11 A. I can pull it out again. I have it.

12 Q. And you cite in Footnote 24 on page 10
13 of that the examples from which you drew the
14 characterization of Public Television as a
15 niche network; is that correct?

16 A. That's correct.

17 Q. What was the comparable cable network
18 that you referred to?

19 A. C-SPAN.

20 Q. All right. And in this proceeding,
21 your testimony does not identify -- has not
22 identified PTV as a niche program service; is
23 that correct?

24 A. That's correct.

25 Q. Is that consistent with the results of

1 your regression? That is, does it have
2 different coefficients?

3 A. Yes.

4 Q. And describe -- I'm sorry --

5 A. I should be -- different coefficients
6 relative to?

7 Q. To other -- to other program
8 categories that you've identified as niche
9 programming.

10 A. Clearly, yes.

11 Q. Now, yesterday Mr. MacLean showed you,
12 among other drawings -- and I'm sorry I'm not
13 going to be able to do the same -- one that
14 appears to be an X with royalties on the left
15 axis and apparently some minutes of
16 programming, or some similar thing, with
17 respect to CTV programming and Devotional
18 programming. Do you recall that?

19 A. I do.

20 Q. And for CTV, he had a black line that
21 started in the lower left and increased to the
22 right?

23 A. That's right.

24 Q. And for Devotional programming, he had
25 a line that started in the upper left as red

1 and went down to the lower right; is that
2 correct?

3 A. I do remember.

4 Q. And that slope would indicate a
5 negative coefficient; correct?

6 A. That's correct.

7 Q. But your study did not provide a
8 negative coefficient for Devotional
9 programming, did it?

10 A. It did not.

11 Q. So what is the meaning of a positive
12 coefficient in this context?

13 A. A positive coefficient in this context
14 means that the relative CSO value for
15 programming, in this case Devotional
16 programming, would be positive.

17 Q. So that more minutes of Devotional
18 programming is associated with increased
19 royalties; is that right?

20 A. I'm sorry; yes, that would be a
21 clearer way to say the same thing.

22 JUDGE STRICKLER: Are you referring to
23 the drawing that Mr. MacLean did where he had
24 cost as a percent of income?

25 THE WITNESS: It was -- it was one

1 after this, I believe. That one was with beef
2 and lettuce and this one that Mr. Stewart is
3 referring to was with CTV and Devotional.

4 JUDGE STRICKLER: Okay.

5 BY MR. STEWART:

6 Q. Now, he also talked to you about your
7 use of log royalties as the dependent variable;
8 is that correct?

9 A. That's correct.

10 Q. He talked about how two different
11 cable systems, one with a thousand subscribers
12 and one with 100,000 subscribers -- do you
13 recall that?

14 A. I do.

15 Q. And a 10 percent increase in the
16 royalties would be associated in the two cases
17 with a thousand subscribers in the large system
18 but only ten in the small system -- no?

19 A. One hundred.

20 Q. One hundred in the small system. So
21 if you had used a linear royalty measure, that
22 10 percent increase in both systems, would it
23 have produced the same effective relationship
24 for your regression purposes?

25 A. I don't -- so if my dependent variable

1 had just been royalties?

2 Q. Yes.

3 A. Would it have produced the --

4 Q. Would it have produced a different
5 result in effect, or a different effect
6 measured for the two different systems, each of
7 which had a 10 percent increase?

8 A. No, it would have been the same thing.

9 Q. Would it not have produced an increase
10 of a thousand in the 100,000 subscriber
11 network?

12 A. Oh, I'm sorry; if that same parameter
13 had been with a linear regression, yes, it
14 would have produced the same linear effect for
15 both.

16 Q. So the impact would have been measured
17 at 100 times more for the large system than the
18 small system?

19 A. That's correct.

20 Q. So why did you include -- is that
21 related to why you include the log form of the
22 royalties?

23 A. Yes.

24 Q. How so?

25 A. Because as I mentioned, especially

1 when it came to the minutes of programming, I
2 thought it important to capture this idea that
3 there is more likely to be a proportional
4 effect on royalties of linear changes in
5 variables than a linear effect.

6 Q. And Mr. MacLean also talked to you
7 about the level shift issue. Do you recall
8 that?

9 A. I do.

10 Q. And the numbers that he picked for his
11 hypothetical showed a 50 percent increase in
12 the Devotional coefficient and a 5 percent
13 increase in the CTV coefficient; is that
14 correct?

15 A. Something like this, yes.

16 Q. Now, if the actual numbers turned out
17 to be substantially smaller, orders of
18 magnitude smaller, would there be any
19 disproportionate any significant
20 disproportionate impact across the coefficient
21 of these different categories.

22 MR. MacLEAN: I object to
23 "significant" in this context.

24 MR. STEWART: I will reword it.

25 JUDGE BARNETT: Thank you.



1 BY MR. STEWART:

2 Q. So, for example, if instead of a .05,
3 if I recall his hypothetical correctly, or
4 .00005 level shift, would there be large
5 differences in the relative sizes of the
6 coefficient?

7 A. No.

8 Q. And could we look at Figures 19 and 20
9 of your Direct Testimony. Let's look at
10 Figure 19. Can you blow that up for me?

11 Your response to Mr. MacLean included
12 a reference to the fact that other things are
13 changing as you would add a level shift across
14 the categories; is that right?

15 A. That's correct.

16 Q. So if you look at the bottom line
17 here, the Devotional -- the average marginal
18 value of Devotional minutes is .032. Do you
19 see that?

20 A. I do.

21 Q. Now, comparable orders of magnitude,
22 although the numbers are slightly larger, are
23 Program Suppliers at .69 and Public Television
24 at .054. Do you see that?

25 A. Yes, that's correct.

1 Q. So a level shift would have a similar
2 order of magnitude of effect on those average
3 marginal values as it would for the
4 Devotionals; is that correct?

5 A. Broadly, yes.

6 Q. Now let's look at Figure 20. You see
7 in the bottom line comparing the implied share
8 for Devotional programming against the implied
9 shares for Program Suppliers and Public
10 Television, there is quite a large difference;
11 is that right?

12 A. That's correct.

13 Q. And that's attributable to the amount
14 of programming in those other categories that
15 is in the mix; is that right?

16 A. That's correct.

17 Q. So if you had this level of shift that
18 had even the kind of disproportionate impact
19 that Mr. MacLean's hypothetical showed, would
20 you necessarily expect to see a significant
21 increase in the relative increase in the
22 Devotional implied share?

23 A. No.

24 Q. Mr. MacLean talked to you at some
25 length about implying a variable for

1 nonduplicated network minutes. Do you recall
2 that?

3 A. I do.

4 Q. There was some Greek and some algebra
5 involved, as I recall. So first, your study
6 defines nonduplicated Big Three network minutes
7 as those minutes that are not -- as including
8 programs that were not aired simultaneously
9 with local versions or other distant signal
10 versions of the same programming; is that
11 correct?

12 A. That's correct.

13 Q. Now, I'm not going to test you on the
14 law, but if the law were -- if the FCC's
15 network non-duplication rule were that all
16 programming from Big 3 networks was to be
17 blacked out at the request of a local authority
18 of the same network by cable systems,
19 regardless of whether they aired at exactly the
20 same time, would that lead you to expect a
21 large or small -- or what would that lead you
22 to expect about the likely value of this,
23 quote-unquote, network nonduplicated
24 programming?

25 A. I would think it would not be very

1 important.

2 Q. I'm not entirely clear on this, but I
3 want to make sure that the record is clear. In
4 discussing something with Mr. MacLean, I
5 believe he referred to your definition of the
6 hypothetical market, or your description of
7 your view of the hypothetical market, and he
8 suggested, if my memory is correct, that such a
9 hypothetical market would include a minimum
10 fee. Do you remember that testimony or do you
11 remember that question?

12 A. I don't remember that specific
13 question.

14 Q. Just to be clear, in your view of what
15 the hypothetical market would be, would there
16 be a minimum fee?

17 A. No.

18 MR. STEWART: I have no further
19 questions.

20 JUDGE BARNETT: Okay. Thank you.
21 Professor Crawford, you may be excused.

22 THE WITNESS: Thank you.

23 MR. STEWART: Your Honor, our next
24 witness is on her way here from her hotel. So
25 if we could have the morning break, that would

1 be great.

2 JUDGE BARNETT: We will be happy to do
3 that. 15-minute recess.

4 (A recess was taken at 10:21 a.m.,
5 after which the trial resumed at 10:50 a.m.)

6 JUDGE BARNETT: Raise your right hand.
7 Whereupon,

8 CERIL SHAGRIN

9 was called as a witness and, having been first duly
10 sworn, was examined and testified as follows:

11 JUDGE BARNETT: You may be seated.

12 DIRECT EXAMINATION

13 BY MR. STEWART:

14 Q. Please state your name.

15 A. Ceril Shagrin.

16 Q. Could you pull the mic a little closer
17 to you.

18 A. Absolutely.

19 Q. Ms. Shagrin, what is your current
20 occupation?

21 A. I'm a consultant for, primarily,
22 Univision.

23 Q. And before becoming a consultant,
24 where did you work?

25 A. I worked at Univision for over

1 17 years, and I worked for Nielsen for about
2 27 years.

3 Q. So Nielsen was prior to Univision; is
4 that right?

5 A. Yes.

6 Q. What work did you do while you were at
7 Univision?

8 A. I organized their Research department,
9 and I was involved in analysis of Nielsen
10 research and designing research for learning
11 more insights into our viewers and our
12 customers.

13 MR. STEWART: Is that mic on,
14 actually?

15 THE WITNESS: Is this better?

16 MR. STEWART: Yes.

17 THE WITNESS: Thank you.

18 BY MR. STEWART:

19 Q. So how long you were at Nielsen?

20 A. 27 years.

21 Q. And what were your positions at
22 Nielsen?

23 A. I started in their Inspection
24 department, where I tested all of the computer
25 programs to make sure that the data that we

1 were releasing was accurate. And I left there
2 as a Senior Vice President in Market
3 Development and Innovation.

4 Q. Did you work while you were at Nielsen
5 on developing sampling approaches to better
6 measure minority populations, including
7 Hispanic households?

8 A. I did.

9 Q. How did you do that work? What was
10 that work?

11 A. With the Hispanic households, the
12 Spanish networks wanted to be measured with
13 equal quality as Non-Hispanic. So in order to
14 do that, I had to learn the differences within
15 a Hispanic household and a non-Hispanic
16 household and what were the key differences
17 within that universe. I developed the concept
18 of language differences and language weighting,
19 which is used today.

20 Q. Now, Ms. Shagrin, have you also
21 participated in industry groups that are
22 focused on the quality of audience
23 measurements?

24 A. Yes, I have. I have been a very
25 active member of the Media Rating Council,

1 where all of the materials that we use in the
2 services that the industry uses are audited to
3 make sure that the data are being -- the work
4 is being done correctly.

5 I also chaired the Council for
6 Research Excellence for five years and was a
7 participating member of that council from its
8 development to now when it is leaving.

9 Q. And what does the Council for Research
10 Excellence focus on?

11 A. The Council for Research Excellence
12 focuses on methodology issues, both in terms of
13 changes that are coming, digital, et cetera,
14 and current, and how the world changes and
15 people consume broadcasts and is constantly
16 trying to stay ahead of it to know what has to
17 be done to measure it accurately.

18 Q. Did you also participate in an
19 organization called COLCAM, for short?

20 A. I was an active member of COLCAM for
21 about five or six years, and I turned my
22 position over to someone else at Univision who
23 was in charge of local measurement, so that she
24 would have an opportunity to grow.

25 Q. So what, in general, does COLCAM focus

1 on?

2 A. COLCAM focuses on local measurement,
3 not on national at all, unless it needs to know
4 the differences. But anything related to
5 COLCAM -- to local measurement, COLCAM looks
6 into.

7 Q. And have you been asked to testify
8 before Congress about issues relating to
9 audience measurement?

10 A. I have, twice.

11 Q. Could you describe those for me.

12 A. Once, when Nielsen rolled out Local
13 People Meters and we at Univision felt that the
14 sample was not representative. Congress
15 apparently agreed that it was not
16 representative and the outcome of those
17 hearings was the birth of CRE, the Council for
18 Research Excellence.

19 I did a similar thing with Arbitron's
20 Portable People Meter. I testified in Congress
21 and I was one of three people that monitored
22 the differences that Arbitron made to address
23 the problems that we had identified.

24 Q. Arbitron was providing radio ratings;
25 is that right?

1 A. Yes, they were.

2 Q. Using that new meter technology; is
3 that correct?

4 A. Yes.

5 Q. Ms. Shagrin, you are a recipient of
6 the Hugh Malcolm Beville Award?

7 A. Yes, I am.

8 Q. What is that award?

9 A. That is an award that is given by the
10 broadcast industry to a person that they
11 determine has made a significant contribution
12 to broadcast measurement.

13 Q. And all told, how many years have you
14 worked in audience measurement, the audience
15 measurement field?

16 A. 45 years.

17 MR. STEWART: Your Honor, I proffer
18 Ms. Shagrin as an expert in television audience
19 measurement.

20 JUDGE BARNETT: Hearing no objection,
21 Ms. Shagrin is so qualified.

22 MR. STEWART: Thank you.

23 BY MR. STEWART:

24 Q. So you were asked by the Commercial
25 Television claimants in this proceeding to

1 review and evaluate the viewing study that was
2 presented by Dr. Jeffery Gray?

3 A. Yes, I was.

4 Q. And did you provide a written
5 statement reporting your analysis?

6 A. Yes, I did.

7 Q. I put in front of you a copy of what's
8 previously been admitted into evidence as
9 Exhibit 2009. Do you see that?

10 A. Yes, I do.

11 Q. Is this your written statement?

12 A. Yes, it is.

13 Q. Do you have any corrections?

14 A. No, I do not.

15 Q. Okay. So first, let's talk about
16 Nielsen, in general. Does the broadcast
17 television industry rely on Nielsen data?

18 A. Yes, they do. It is the currency.

19 Q. And what particular kinds of data --
20 Nielsen data does the television market use?

21 A. Primarily ratings or projections from
22 the ratings, that shows who is watching, how
23 much they are watching, what else they do
24 watch.

25 Q. And could you just define what a

1 rating is?

2 A. A rating is a percentage -- for
3 national, I'm sorry, for national, the rating
4 is a percentage of persons who are watching a
5 particular time or program and it is an average
6 minute audience.

7 Q. So that's a percentage of all of the
8 television households in the U.S.; is that
9 correct?

10 A. Based on a well-designed sample.

11 Q. And roughly how many television
12 households are there in the United States? Do
13 you know? It changes, I guess.

14 A. I don't want to guess.

15 Q. That's fine. Do national advertising
16 markets and local advertising markets use
17 different Nielsen ratings measures?

18 A. They do use different measures for
19 national. What they look at is average
20 minutes. For local, it is a different
21 measurement, similar methodologies in some
22 markets, and it is an average quarter hour. So
23 anyone who watches at least five minutes within
24 the quarter hour is credited with the entire
25 quarter hour.

1 Q. Now, Ms. Shagrin, would it be fair to
2 say that you have spent your career working to
3 make sure that Nielsen data that are going to
4 be relied on in the marketplace are valid,
5 reliable, and properly measure minority
6 populations?

7 A. I spent 45 years doing that and I
8 think I will be doing that forever, as long as
9 I'm around.

10 Q. I hope so. And what is meant by
11 "valid"?

12 A. Valid means it's accurate. It means
13 it's usable. It means it's done based on good
14 research.

15 Q. And what is meant by "reliable"?

16 A. Reliable means that you don't change
17 it, that you're using the same rules and the
18 same processes and methodology so that changes
19 in audience are real changes and not changes in
20 methodology.

21 Q. Okay. Let's turn to Dr. Gray's study.
22 Do you understand that Dr. Gray was attempting
23 to measure the relative amounts of viewing of
24 various programs on distant signals in cable
25 households?

1 A. Yes, that's what he was attempting.

2 Q. And Dr. Gray used viewing from the
3 National People Meter sample; is that correct?

4 A. Yes, it is.

5 Q. Do you understand that in reporting
6 his final reports, Dr. Gray replaced all of the
7 reported Nielsen viewing numbers with
8 projections that he estimated based on his own
9 regression analysis?

10 A. That is my understanding from his
11 testimony.

12 Q. And in all of your years of experience
13 in the media and audience measurements fields,
14 have you ever heard of anyone in the
15 marketplace relying on projected viewing
16 numbers that were substituted for actual
17 Nielsen numbers?

18 A. Never.

19 Q. Now, let's first look at sampling
20 questions. Is the design and selection of a
21 sample important to the validity and
22 reliability of a viewing measurement?

23 A. It's the only way you can get reliable
24 and valid data.

25 Q. And is Nielsen's National People Meter

1 sample a good sample?

2 A. Yes, it is.

3 Q. What was it designed for?

4 A. It was designed to measure network
5 audiences, national audiences, whether it was
6 cable or syndication or network.

7 Q. Nationally distributed?

8 A. Nationally distributed. Thank you.

9 Q. Now, if you were trying to measure --
10 setting out to measure viewing to programs on
11 distant signals in cable households, what would
12 be the first steps you would take to try and
13 design that sample?

14 A. I would do my research so that I
15 understood exactly what it was and so that I
16 understood how you had to measure it in order
17 for it to be reliable.

18 Q. So I'd ask you to turn to Exhibit A
19 that is attached to your testimony, and let's
20 look at it on the screen.

21 Now first of all, do you see that?

22 A. Yes.

23 Q. First of all, did you prepare these
24 Exhibit A, B, and C charts that are attached to
25 your testimony?

1 A. I did not.

2 Q. They were prepared for you?

3 A. By Dr. Bennett.

4 Q. Okay. And so what is your
5 understanding of what Exhibit A shows?

6 A. What Exhibit A shows is that the
7 smaller the market the greater the likelihood
8 that they will be viewing to a distant signal,
9 primarily because in a small market there are
10 fewer choices.

11 Q. And let's turn to Exhibit B. And what
12 is your understanding of what this exhibit
13 shows?

14 A. It confirms what I saw from Exhibit A,
15 which, again, is that the smaller the market,
16 the greater the likelihood that someone will be
17 picking up distant signals.

18 Q. And this particular chart on the
19 bottom, it's the number of local stations; is
20 that correct?

21 A. Yes.

22 Q. And so in general, the number of local
23 stations is correlated with the size of the
24 market; is that correct?

25 A. Yes, it is.

1 Q. Now, do these two exhibits provide
2 information related to the first step you
3 talked about doing your research for
4 constructing a proper sample to measure distant
5 signal program viewing?

6 A. They confirm the need to do that in
7 order to understand the impact.

8 Q. And in particular, what sampling
9 techniques might you apply, given the patterns
10 of distant signals to market size?

11 A. I would start out by oversampling
12 small markets. I would do my research to make
13 sure that there weren't other things that I
14 needed to be aware of and separately sample.
15 But I would know from looking at just these two
16 graphs that it was critically important to
17 oversample the small markets so that I could
18 get a real read of what was different in a
19 small market and a large market.

20 Q. With respect to distant signals?

21 A. With respect to distant signals.

22 Q. And would you turn please to Exhibit
23 C. And can you describe your understanding of
24 what this graph shows?

25 A. Well, this graph actually helps to

1 verify the difference between a large market
2 and a small market. Because where you have a
3 large market, and there are 15 choices of what
4 you could watch, you don't need to look for
5 anything else. When you have a small market,
6 it only has maybe four stations they can reach
7 normally, the need and the desire to go to
8 distant signals is increased.

9 Q. Okay. Now, so you talked about how
10 you would seek to oversample small markets
11 where the distant signals are. Does the
12 National People Meter sample oversample small
13 markets?

14 A. The National People Meter does not
15 oversample small markets.

16 Q. And -- sorry. Go ahead.

17 A. The sample for the National People
18 Meter is based on population in each market.

19 Q. So the largest markets have the most
20 meters; is that correct?

21 A. Yes, that is correct.

22 Q. Now, in your opinion, can the NPM
23 sample be used in its current form to produce a
24 proper measure of distant signal viewing?

25 A. I do not believe it could.

1 Q. Now, I'll ask you to turn to page 9 of
2 your testimony of Exhibit 2009. And here there
3 is a section headed Weighting Problems. Now,
4 does Nielsen -- I'm sorry; are you there?

5 A. I'm not there. I'm sorry.

6 Q. Okay.

7 A. Now I'm on page 9. Thank you.

8 Q. First, does Nielsen apply weighting to
9 the viewing data that it collects from the NPM
10 sample households as part of its NPM national
11 ratings reports?

12 A. Nielsen uses a national sample for its
13 national rating reports.

14 Q. And does it apply weights to the
15 household data?

16 A. It does apply weights to the household
17 data, primarily to make sure that it is
18 representative of types of households and
19 persons.

20 Q. And do you happen to know whether the
21 weighting criteria includes a criterion for
22 whether the household receives distant signals
23 on a cable system?

24 A. It is not part of the weighting
25 procedures today.

1 Q. And weighting is important; is that
2 correct?

3 A. It's critical.

4 Q. So do you understand that Dr. Gray
5 used only unweighted Nielsen household data in
6 his viewing study?

7 A. That is what he did.

8 Q. And do you have an opinion about
9 whether that would produce a valid or reliable
10 representation of viewing -- of the viewing
11 that he collected?

12 A. I am certain it would not be reliable,
13 if it was done without weighting.

14 Q. And then finally, based on your
15 experience and expertise, and on reviewing
16 Dr. Gray's testimony describing his study, do
17 you have an opinion as to whether Dr. Gray's
18 study provides valid or reliable measures of
19 actual viewing of programs on cable distant
20 signals from 2010 to 2013?

21 A. I am certain that it does not.

22 Q. Thank you.

23 MR. STEWART: No further questions at
24 this time.

25 JUDGE BARNETT: Cross-examination?

1 CROSS-EXAMINATION

2 BY MR. OLANIRAN:

3 Q. Good morning, Ms. Shagrin. My name is
4 Greg Olaniran. I represent the Program
5 Suppliers.

6 A. Good morning.

7 Q. What year did you leave Nielsen?

8 A. 18 years ago. I'd have to go back, I
9 think it was 2000 -- 1999 or 2000.

10 Q. Okay. Thank you. And while you were
11 at Nielsen, would you have had an opportunity
12 to work at all on some of the major data
13 collection techniques that happened while you
14 were there?

15 A. I was involved in all of them.

16 Q. Okay. So you worked on development of
17 the diaries?

18 A. The diaries, local market measurement,
19 national measurement, People Meter.

20 Q. And what kind of work did you do on
21 the diaries?

22 A. I examined the diaries to see how we
23 could get better response rate. I would look
24 at ways we tested. Would giving more money,
25 less money, provide better return rates? When

1 I started, the diaries were fine. By the time
2 I left, the diaries were not really a good data
3 collection methodology.

4 Q. Is it fair to say you had complaints
5 about the diaries the entire time you were
6 using them?

7 A. Not in the early times, but as there
8 were more choices, it was harder to do.

9 Q. What kind of complaints did you have?

10 A. Response rates.

11 Q. What do you mean by that?

12 A. It's important to get high response
13 rates so that you know you have a
14 representative sample. When I first went to
15 work for Nielsen, response rates on the diary
16 were probably about 80 percent of the people
17 returned them. Today, it's about 6 percent.

18 Q. And what types of groups or
19 communities typically complained about the
20 diaries?

21 A. Well, mostly it's small markets.

22 Q. And you also worked on the Local
23 People Meters; right?

24 A. Local and national.

25 Q. Okay. What kind of work did you do on

1 the LPMs?

2 A. I looked at response rates. I looked
3 at type of people who responded. We examined
4 and interviewed people to make sure that they
5 understood what they had to do in terms of
6 being in a people meter sample.

7 Q. And when the LPMs were first rolled
8 out, did you get complaints on those too?

9 A. Rarely.

10 Q. And you certainly testified that you
11 worked on the National People Meter, the NPMs.
12 What role did you play in the development of
13 the NPM?

14 A. I tested the meter. The original
15 homes, I interviewed them to make sure that
16 they understood what they had to do. When
17 Nielsen began the measurement of Hispanics, we
18 realized that the household size was bigger and
19 having eight buttons wasn't enough. So in
20 larger households, we developed a meter which I
21 designed that had 16 buttons for people to
22 press.

23 Q. And it was on the NPMs that you
24 testified before the Congress?

25 A. No, it was on the LPM.

1 Q. I'm sorry; on the LPM. And as for the
2 diaries in addition to -- I suppose the change
3 to the NPM was the result of complaints from
4 the Hispanic community because of
5 under-representation; is that right?

6 A. On the local market.

7 Q. On the local markets. But you did get
8 complaints about NPM also; right?

9 A. Rarely.

10 Q. But you didn't get complaints about
11 NPMs or the LPMS?

12 A. We got a lot of complaints on the
13 LPMS.

14 Q. Okay.

15 A. We -- we being Nielsen -- did a lot of
16 work with customers, users of the data to make
17 them understand what was different and what the
18 methodologies were. And even here, like any
19 sample, you don't get the same cooperation from
20 everybody, which is why weighting becomes
21 important.

22 Q. In general, is it -- is it unusual for
23 different communities to complain about -- to
24 have dissatisfaction with Nielsen measurements
25 in general?

1 A. Whenever there is a change, there are
2 people who are worried about the change. The
3 problems with Local People Meter was that
4 response rates were different for different
5 types and so minorities were not properly
6 reported. And that was what the hearings were
7 about and that was what was changed.

8 Q. And generally speaking the complaints
9 tended -- tend to be by -- mostly by people
10 that think that they are -- somehow their
11 audience is underrepresented or understated or
12 both; right?

13 A. Most people don't complain if they are
14 getting extra viewers, only if they are not
15 getting enough.

16 Q. Okay. Do you know how long Nielsen
17 has been -- are you aware -- you certainly are
18 aware that Program Suppliers use Nielsen data
19 for this proceeding; correct?

20 A. Yes.

21 Q. And do you know how long Nielsen has
22 been providing viewing data to Program
23 Suppliers for use in these royalty distribution
24 proceedings?

25 A. I don't know in terms of the royalty

1 procedures, but the industry has been using
2 Nielsen data since Nielsen became the supplier.

3 Q. In fact, it's been the sole surviving
4 audience measurement company, hasn't it?

5 A. Pretty much.

6 Q. And while you were at Nielsen, did you
7 have any involvement at all in the data
8 gathering for the prior data that -- for data
9 that Program Suppliers received in prior
10 proceedings? Did you have any involvement in
11 the development of that data?

12 A. I did in terms of the proceedings
13 related to Local People Meters, if that's what
14 you're asking.

15 Q. I'm talking in terms of the data that
16 Program Suppliers received from Nielsen for
17 proceedings prior to this one, whether you had
18 any involvement in the development of that.

19 A. I have been very involved in the
20 creation and use of National and Local People
21 Meter data, but I have not been involved in
22 individual groups' use of that data.

23 Q. Okay. So your involvement has been
24 just development of the database itself; right?

25 A. And looking into questions when users

1 of the data were concerned that with its
2 accuracy.

3 Q. But you never worked directly with
4 clients?

5 A. Just agencies and networks.

6 Q. Now, are you aware of any discussions
7 that Program Suppliers had with Nielsen's staff
8 before Nielsen began the analysis that Nielsen
9 did for this proceeding?

10 A. Not for this proceeding.

11 Q. And do you know the persons that
12 Program Suppliers communicated with besides
13 Paul Lindstrom, before and during the
14 development of the analysis that was used for
15 this procedure?

16 A. I was not involved before learning
17 about this proceeding.

18 Q. Do you know Paul Lindstrom?

19 A. I know Paul Lindstrom.

20 Q. So -- and do you know whether -- I
21 assume you also don't know the information that
22 Program Suppliers conveyed to Nielsen's staff
23 in developing the analysis for this proceeding?

24 MR. STEWART: Objection. Lack of
25 foundation. I'm not sure the witness

1 understands the terms of art that Mr. Olaniran
2 is using.

3 MR. OLANIRAN: I can clarify if she
4 doesn't understand. I am happy to do that.

5 JUDGE BARNETT: Perhaps it's better to
6 form the question without beginning it "I
7 assume."

8 BY MR. OLANIRAN:

9 Q. Okay. Do you know whether Program
10 Suppliers informed the Nielsen staff of what --
11 of the -- what they intended to do with data
12 that they requested from Nielsen?

13 MR. STEWART: Objection. The witness
14 testified she hasn't been at Nielsen for
15 18 years. I'm not clear what Mr. Olaniran is
16 referring to, but that needs to be clarified on
17 the record.

18 JUDGE BARNETT: Well, if she can
19 answer the question, she may. She hasn't been
20 there for 18 years, so I think that speaks
21 enough to whether she has the ability to answer
22 the question on a current basis.

23 Ms. Shagrin, if you can answer the
24 question, you may.

25 THE WITNESS: I would not have been

1 aware of those conversations.

2 BY MR. OLANIRAN:

3 Q. Okay. In fact, you haven't had any
4 conversations with current Nielsen staff about
5 the data that was provided to Program Suppliers
6 for use in this proceeding; is that correct?

7 A. That is correct.

8 Q. Okay. And you -- when you were
9 talking to Mr. Stewart about validity and
10 reliability about the NPM data, were you
11 referring in general -- were you referring in
12 general to the NPM database itself or were you
13 referring to Dr. Gray's analysis?

14 A. I don't understand your question.

15 Q. Okay. You had a conversation when you
16 were -- in your Direct Testimony you were
17 talking about validity of data and reliability
18 of data. Did you intend for that reference to
19 be just for the NPM database or were you
20 referring to Dr. Gray's analysis as being
21 unreliable and invalid?

22 A. I was referring to the use of the
23 industry of Nielsen data and my opinion of the
24 work that was used for this project.

25 Q. Okay. So you were referring to

1 Dr. Gray's analysis?

2 A. As not being valid and reliable?

3 Q. Yes. Is that what you were referring
4 to?

5 A. Yes.

6 Q. Okay. But the database in and of
7 itself, the Nielsen NPM you considered to be
8 valid and reliable; is that right?

9 A. If it's correctly used.

10 Q. But the NPM is a study in and of
11 itself; correct?

12 A. It's a sampling in and of itself.

13 Q. Do you consider the results of this --
14 the results of that sample valid and reliable?

15 A. Yes.

16 Q. What is your understanding of the
17 purpose of Dr. Gray's analysis?

18 A. I don't know exactly what the purpose
19 is, but I do know that all of the steps that
20 are required to get reliable data were not done
21 in this analysis.

22 Q. Did you understand Dr. Gray to be
23 computing ratings?

24 A. Yes, but he was just using raw
25 ratings.

1 Q. He was using raw ratings, so was he
2 using raw viewing data?

3 A. He was using raw viewing data that was
4 not totally representative.

5 Q. Representative of what?

6 A. Of distant viewing.

7 Q. Did you read Dr. Gray's testimony?

8 A. Yes.

9 Q. And -- and did you understand that he
10 was developing an econometric model?

11 A. It's what he was attempting to do.
12 It's not what I would consider a valid
13 research.

14 Q. I guess, did you understand that he --
15 he was developing an econometric model -- a
16 regression analysis? Did you understand that?

17 A. He was attempting that.

18 Q. He was attempting -- you think he was
19 attempting a regression analysis; correct?

20 A. Yes.

21 Q. You didn't think he ultimately
22 performed a regression analysis?

23 A. Well, he performed. I'm not sure he
24 did it right.

25 Q. Are you an econometrician?

1 A. No.

2 Q. Have you actually developed a
3 regression analysis on your own?

4 A. No.

5 Q. Okay. Do you understand the variables
6 that Dr. Gray used in his regression analysis?

7 A. No.

8 Q. Do you understand the role that the
9 raw viewing data played in his regression
10 analysis?

11 A. My understanding is he used the
12 numbers as they were given to him.

13 Q. And he didn't do anything else with
14 the numbers?

15 A. My understanding.

16 Q. Okay.

17 MR. OLANIRAN: Excuse me, your Honor,
18 for just a second.

19 (Mr. Olaniran conferring with
20 Ms. Plovnick.)

21 BY MR. OLANIRAN:

22 Q. Ms. Shagrin, do you recall whether
23 during the 2010 through 2013 time frame Nielsen
24 expanded the NTM markets?

25 A. Expanded the sample?



1 Q. Yes, expanded the sample; I'm sorry.

2 A. I am aware.

3 Q. And what exactly did Nielsen do?

4 A. They increased the sample size by --
5 across the total U.S.

6 Q. And did that affect the local markets
7 also?

8 A. The local market samples, some of them
9 were increased, not all of on them. But again,
10 the way it was done with weighting, everyone
11 ended up being representative.

12 Q. While you were at Nielsen, did you
13 understand that clients very often requested
14 custom work from Nielsen?

15 A. Yes.

16 Q. And did it come in basically
17 two types, either customer analysis or custom
18 design; correct?

19 A. Custom analysis, yes. Customer
20 design, not very often.

21 Q. And what is custom analysis?

22 A. It is to say I want to look at the
23 ratings of every show that's an hour. I don't
24 want to look at anything but an hour. I want
25 to look at households that have an 18- to



1 34-year-old.

2 Q. And when the clients request that
3 information, do they generally inform -- would
4 they have informed Nielsen of the objective of
5 the data request?

6 A. Sometimes.

7 Q. Okay. And the data that Nielsen
8 provides them, it's usually data that's within
9 the Nielsen database itself; correct?

10 A. Yes.

11 Q. Okay. And when customers request
12 information from Nielsen, it's not subject to
13 the MRC audit, for example, because it's
14 private -- it's data for private use; correct?

15 A. It would not be separately audited.
16 But the database from which that data was
17 pulled would have been part of the audit.

18 Q. The NPM data, for example, would have
19 been part of the MRC audit from 2010 to 2013;
20 correct?

21 A. Yes.

22 JUDGE FEDER: Excuse me. Ms. Shagrin,
23 could you please define for us what the MRC
24 audit is?

25 THE WITNESS: Happy to do that. The

1 MRC is the Media Rating Council. It was
2 developed as a result of hearings around 1964,
3 and it was important because it is the currency
4 for the media business.

5 And so that created the Media Rating
6 Council, and the obligation to audit any data
7 that Nielsen collected for any of its services
8 that was being used as currency. So the local
9 markets are audited, the national markets are
10 audited. And the purpose of the audit is to
11 make sure that the sample design is right. And
12 if the sample design is right, are the
13 processes used to put the data together correct
14 and do they do what they say they're doing?
15 And that's why every single year every product
16 is audited.

17 JUDGE FEDER: Thank you.

18 BY MR. OLANIRAN:

19 Q. And I think you said that to some
20 extent there was custom design; is that right?
21 Clients would request custom design of Nielsen
22 -- of Nielsen data?

23 A. It would be pulling data together, but
24 the raw data had already been audited. I
25 think -- so it might be that I only want to

1 look at households that have a Toyota.

2 Q. And then this also, the custom
3 research that Nielsen also does, which I think
4 is more in line with what you just told me;
5 right?

6 A. There is less custom research than
7 there was many years ago.

8 Q. But there are costs associated with
9 all of this different types of custom work, are
10 there not?

11 A. I'm not sure I understand your
12 question.

13 Q. The clients have to pay for these
14 custom works to be done to be performed by
15 Nielsen; is that right?

16 A. Yes, depending on what they're asking
17 for.

18 Q. Nielsen is not cheap, is it? Strike
19 that.

20 So if a client were to seek custom
21 analysis of Nielsen's existing database, it
22 would not be unusual for a client to seek
23 information from Nielsen's existing database to
24 use for some other purpose; right?

25 A. But the basis for that would have been

1 audited data.

2 Q. I'm sorry; I didn't --

3 A. The basis for looking at data by
4 segmenting it differently would always be using
5 data, raw data that had already been audited.

6 Q. And for the 2010 through 2013 period,
7 the NPM was audited; right?

8 A. Yes, every year.

9 Q. And it would not be unusual for a
10 client to come to Nielsen and consult with
11 Nielsen with regard to what their intention for
12 the data -- for use of the data was; right?

13 A. I'm not sure I understand your
14 question.

15 Q. Could a client have come to Nielsen
16 during that period and consulted with the staff
17 about what they needed with regard -- what they
18 were trying to accomplish, and then Nielsen
19 make a recommendation as to what was the most
20 -- what was the best database from which that
21 information to be extracted?

22 A. That could happen. I don't remember
23 ever seeing anybody who pulled data that way
24 and used it.

25 Q. You said in your testimony that

1 distant signals are more prevalent in smaller
2 markets than in larger markets. I think you
3 testified to that this morning; correct?

4 A. Yes.

5 Q. Now, are you saying that any of
6 Dr. Gray's analysis was biased in favor of or
7 against smaller markets?

8 A. I don't have the detail of what he
9 did, so based on what I read, I don't think
10 there was any difference in how he treated
11 them. But I do think he should have had some
12 differences.

13 Q. Now, if a syndicator -- if a
14 syndicator wanted to develop an audience
15 estimate for a program; right?

16 A. Uh-huh.

17 Q. Could that syndicator go to Nielsen
18 and have Nielsen aggregate across the country
19 to do so?

20 A. Using data that had already been
21 collected and weighted, yes, that happens.

22 Q. Is it true that if someone were to
23 examine the respondent level viewings for a
24 syndicator estimate for any Nielsen NPM, you
25 could find instances where the number of



1 households represented would be greater than
2 the number of subscribers for the system?

3 A. I don't understand your question.

4 Q. Which part are you having trouble
5 with?

6 A. I'm not -- I don't understand what
7 you're asking.

8 Q. My question is if you looked at a
9 respondent level estimate for any Nielsen NPM,
10 that you could find instances where the number
11 of households represented by that NPM would be
12 greater than the number of subscribers to the
13 system in that particular area.

14 A. I would be surprised if that happened.
15 But in any event, they would have used the
16 particular weight for that household. So if
17 you wanted to look at something and you have
18 particular kinds of households that you want to
19 accumulate and see what the ratings were or
20 what they were watching, you could do it. But
21 you wouldn't start with raw data. You would
22 start with data that had already been weighted.

23 Q. Okay.

24 MR. OLANIRAN: Those are all my
25 questions. Thank you very much.

1 MR. MacLEAN: Three questions, your
2 Honor.

3 JUDGE BARNETT: I'm counting.

4 MR. MacLEAN: Three hours of
5 questions.

6 (Laughter.)

7 JUDGE STRICKLER: Are there any Greek
8 letters?

9 CROSS-EXAMINATION

10 BY MR. MACLEAN:

11 Q. Good morning, Ms. Shagrin. I'm Matt
12 MacLean. I represent the Settling Devotional
13 Claimants.

14 For the time period at issue in this
15 proceeding, 2010 to 2013, do you know whether
16 Local People Meter -- we are talking about
17 Local People Meter here -- whether Local People
18 Meter measurements were available in all
19 markets?

20 A. They were not.

21 Q. During this same time period in
22 question, 2010 to 2013, do you know if Nielsen
23 diary measures were available in all markets?

24 A. They were not.

25 Q. Were Nielsen sweep measurements

1 available in all markets during this period of
2 time 2010 to 2013?

3 A. Sweep measurements were available;
4 however, not every market was using the same
5 methodology.

6 Q. I understand. Okay. Thank you.

7 MR. MacLEAN: No further questions.

8 JUDGE BARNETT: Any further questions
9 for Ms. Shagrin? Redirect?

10 REDIRECT EXAMINATION

11 BY MR. STEWART:

12 Q. Ms. Shagrin, I wanted to follow up
13 with you on a conversation that Mr. Olaniran
14 had with you about MRC accreditation of the
15 NPM. Do you recall that? Do you recall your
16 conversation with him?

17 A. Yes.

18 Q. Now, I'm sorry, MRC accreditation
19 based on MRC audits is for a particular
20 product; is that right? Or a service offered
21 by Nielsen?

22 A. Each service is -- each service that
23 is syndicated is audited. So that the local
24 market diaries are audited, the local market
25 people meters are audited. The national sample

1 is audited.

2 Q. So the NPM ratings, national ratings
3 reports, that's what's audited; is that
4 correct?

5 A. That is -- that service is audited
6 every year.

7 Q. And is the MRC accreditation
8 considering the purpose for which the service
9 is offered as part of investigating whether
10 it's properly done?

11 A. The audit would look at the sample to
12 make sure that it was representative. They
13 would look at any changes in methodology at the
14 weighting controls.

15 Q. Here is my question. Is the MRC
16 accreditation of the NPM product sufficient to
17 allow it to be used, for example, to project
18 local viewing in the Yakima, Washington,
19 market?

20 A. No, it's sufficient for national.

21 Q. Only national; is that correct? Only
22 national?

23 A. Only national.

24 Q. And is that accreditation -- does that
25 accreditation consider as a necessary part of

1 the accreditation the weighting that Nielsen
2 applies to the NPM households?

3 A. Very critical.

4 Q. Thank you.

5 MR. STEWART: No further questions.

6 JUDGE BARNETT: Thank you very much,
7 Ms. Shagrin. You may be excused.

8 Who is our next witness?

9 MR. ERVIN: Commercial TV clients are
10 going to call Dr. Bennett.

11 JUDGE BARNETT: Is he here?

12 MR. ERVIN: Yes.

13 JUDGE BARNETT: Let's call him.

14 Before we do, let me just update you on our
15 availability. It looks like Friday the 16th
16 and Wednesday the 21st will be the only days we
17 will be available to make up for lost time. So
18 I hope you can work around that schedule.

19 MR. MacLEAN: Your Honor, I don't know
20 if you were asking, but unfortunately as we've
21 said before, I have a hearing in another State
22 on the 21st. And so depending on what's going
23 on -- and Mr. Lutzker also has another
24 out-of-State engagement in on the 21st. We'll
25 do our best with what we can, but just to alert

1 the Judges.

2 JUDGE BARNETT: Thank you.

3 Be careful. A lot of snakes on the
4 floor.

5 THE WITNESS: I will.

6 JUDGE BARNETT: Before you sit down,
7 raise your right hand.

8 Whereupon,

9 CHRISTOPHER BENNETT

10 was called as a witness and, having been first duly
11 sworn, was examined and testified as follows:

12 JUDGE BARNETT: Please be seated.

13 DIRECT EXAMINATION

14 BY MR. ERVIN:

15 Q. Good morning, Dr. Bennett.

16 A. Good morning.

17 Q. Would you please introduce yourself
18 and spell your last name for the record.

19 A. Sure. My name is Christopher Joseph
20 Bennett. And my last name is spelled
21 B-E-N-N-E-T-T.

22 Q. And how are you currently employed?

23 A. I am a Principal at Bates White, which
24 is an economic consulting firm here in D.C.

25 Q. And would you please describe your

1 educational background for us.

2 A. Sure. I have a Bachelor's degree with
3 concentration in Economics and Finance, I have
4 a Master's of Arts degree in Economics, and I
5 have a Ph.D. in Economics with a concentration
6 in econometric methods, which is essentially
7 statistical methods applied to economic data.

8 Q. Before you became a consultant at
9 Bates White, how were you employed?

10 A. Prior to joining Bates White, I was an
11 assistant professor at Vanderbilt University in
12 the Department of Economics.

13 Q. What kind of courses did you teach
14 while you were an assistant professor?

15 A. So during my five years at Vanderbilt,
16 I taught courses in statistics and econometrics
17 at all levels, so undergraduate, master's and
18 Ph.D. level courses.

19 Q. Did you also teach similar courses at
20 other universities?

21 A. I did. I taught courses in math for
22 economists in statistics and also in
23 econometrics at various institutions, including
24 Johns Hopkins, the University of Waterloo, and
25 the University of Western Ontario.

1 Q. In addition to your teaching
2 responsibilities, did you conduct research and
3 author academic articles?

4 A. I did, and I continue to do so.

5 Q. Have you conducted research on
6 econometric and statistical methods
7 specifically?

8 A. Yes. So in a number of papers I've
9 developed new statistical and econometric
10 techniques. And I've published these papers in
11 various academic journals, including the
12 Journal of the American Statistical
13 Association, the Journal of Business and
14 Economic Statistics, and also in the
15 International Economic Review.

16 Q. And have you conducted research
17 involving the reliable measurement of economic
18 phenomena?

19 A. I have. I have done research on
20 measurement issues in a variety of contexts,
21 including the measurement of poverty inequality
22 and financial risk. I've published this work
23 in different journals, including Econometric
24 Reviews, and the Journal of Economic
25 Inequality.

1 Q. And has any of your research involved
2 the use of bootstrap sampling methods?

3 A. Yes, it has. In fact, the bulk of my
4 research has involved the use of bootstrap
5 methods. A number of the publications,
6 including the Journal of Financial Econometrics
7 and the Journal of the American Statistical
8 Association, are both involving the appropriate
9 use of bootstrap methods for drawing inference.

10 Q. Would you consider JASA, the Journal
11 of the American Statistical Association, to be
12 one of the leading, if not the leading,
13 publication in the field?

14 A. Yes, so JASA is, or Journal of the
15 American Statistical Association, is widely
16 considered the leading journal for statistics.

17 Q. Have you been invited to speak and
18 attend conferences that cover the topics,
19 economic topics, econometrics, and related?

20 A. Yes, so I've been invited and attended
21 a number of conferences where I've spoken on my
22 research. I've also been invited to various
23 academic institutions to speak.

24 Q. With your written testimony you
25 submitted a copy of your CV; is that right?

1 A. That's correct.

2 Q. Does your CV contain additional
3 information about your publications,
4 qualifications, and experience in the field of
5 econometrics and economics?

6 A. Yes, it does.

7 Q. Have you worked with databases in your
8 role as a teacher, researcher, and consultant?

9 A. Yes, I've worked with databases in all
10 three capacities.

11 Q. Could you summarize a bit some of that
12 experience, specifically designing and
13 developing databases for statistical analysis?

14 A. Sure. So I've worked on a variety of
15 projects where, you know, I've been involved
16 in, you know, in some instances collecting
17 data, cleaning data, confirming the accuracy of
18 it. Also appending and merging datasets to
19 create, you know, a database from which I can
20 reliably draw an inference.

21 Q. And do you also have professional
22 experience designing and drawing statistical
23 samples?

24 A. Yes, I do. I worked on a number of
25 projects involving the design of statistical

1 samples and the implementation of sampling, as
2 well. As an example, I've been involved
3 advising the U.S. Department of Justice with
4 the design and implementation of statistical
5 sampling for the purpose of several
6 investigations into mortgage underwriting
7 practices by various originators.

8 Q. You were part of the team that was
9 working for the Department of Justice?

10 A. That's correct.

11 Q. Dr. Bennett, what were you primarily
12 asked to do in this case on behalf of the
13 Commercial Television Claimants?

14 A. So my primary responsibility was to
15 create a database which linked information
16 about cable systems and their carriage of
17 distant signals with the programming that
18 actually appeared on those stations. I was
19 also asked to categorize the programming that
20 appears on the distant signals in accordance
21 with the definitions that I understand were
22 agreed upon for this proceeding.

23 Q. And were you also asked to conduct
24 some geographic measurements and data
25 calculations for exhibits that were used by



1 other CTV witnesses in this case?

2 A. Yes, I was. I was asked to perform
3 calculations of distances between distant
4 signals in the communities that they were
5 carried to, and also to prepare several maps
6 showing the location of, you know, specific
7 stations and, again, the communities into which
8 they were importing.

9 Q. Were you also asked to review some of
10 the testimony submitted by other experts in
11 this case, including Dr. Gray and Mr. Horowitz,
12 on behalf of the Program Suppliers?

13 A. I was, yes.

14 Q. Did you provide a written statement,
15 both a direct and rebuttal statement, in this
16 case?

17 A. I have, yes.

18 Q. I placed in front of you a binder that
19 includes Exhibits 2006 and -7, which both have
20 been admitted into evidence. I'd ask you to
21 just review them.

22 Can you confirm for us that
23 Exhibit 2006 is a copy of written Direct
24 Testimony that was filed originally on
25 December 22nd, 2016, corrected on April 11,

1 2017; is that correct?

2 A. Yes, it is.

3 Q. And is 20007 a copy of your written
4 Rebuttal Testimony that was filed on
5 September 15th, 2017?

6 A. Yes, it is.

7 Q. Do you have any corrections to
8 Exhibit 2006?

9 A. I do.

10 Q. You want to turn to page 11?

11 A. So there is a correction in the figure
12 heading. It says the Distribution of Distances
13 Between Communities and Important Distant
14 Signals that should be "imported" as opposed to
15 "important."

16 Q. Okay, great. Any others for 2006?

17 A. No.

18 Q. How about for Exhibit 2007? Do you
19 have corrections there?

20 A. I do.

21 Q. Okay. Why don't you take a look at
22 page 11 to start. Specifically paragraph 32.

23 A. Yes, so there is a typo on the third
24 line. So it says, "between 26 percent and
25 28 percent." And this is in reference to

1 Figure 10, the population numbers in Figure 10.
2 It should be "24 percent and 27 percent."

3 Q. Okay. And do you have one other
4 correction that you want to make here on page
5 -- the next page on paragraph 39? Actually two
6 pages later.

7 A. Yes, so on the third sentence
8 beginning, "Conversely, just the fact that
9 Dr. Gray under-samples educational stations in
10 each of 2010, 2011, and 2012." That should be
11 "in each of 2010, 2011, and 2013."

12 Q. Change 2012 to 2013?

13 A. That's correct.

14 Q. Okay.

15 JUDGE BARNETT: Could you give us that
16 page number again, please.

17 MR. ERVIN: Yes, ma'am. It is page 14
18 of Exhibit 2007, paragraph 39.

19 BY MR. ERVIN:

20 Q. Now, were you directly responsible for
21 the preparation of both of these Exhibits 2006
22 and 2007?

23 A. Yes, I was.

24 Q. And aside from the corrections that
25 you've made today and that have been

1 incorporated, do you declare that this
2 testimony is true and correct and of your
3 personal knowledge?

4 A. Yes, I do.

5 MR. ERVIN: Your Honor, we proffer
6 Dr. Bennett as an expert economist and
7 econometrician with experience in statistical
8 methods and measurements.

9 JUDGE BARNETT: Hearing no objection,
10 Dr. Bennett is so qualified.

11 MR. ERVIN: Thank you.

12 BY MR. ERVIN:

13 Q. Now, Dr. Bennett, were you the
14 economist at Bates White primarily responsible
15 for developing the database that was used for
16 Dr. Crawford's regression?

17 A. Yes, I was.

18 Q. When did you start working on the
19 development of the database?

20 A. I started working on this engagement
21 just over four years ago. I think the
22 categorization process and algorithm was
23 probably about a year into that. So maybe
24 about two years ago.

25 Q. When you get an assignment like this,

1 and with your experience in creating databases,
2 what kind of considerations are you given for
3 the data that you are looking for and wanting
4 to obtain?

5 A. So first and foremost, I think, you
6 know, getting an understanding of the questions
7 that one is going to want to answer and then
8 identifying sources of data that would enable
9 one to, you know, address the question of
10 interest.

11 You know, and I think having
12 identified potential sources of such data,
13 then, you know, verifying that you have
14 reliable sources that are as comprehensive as
15 possible and accurate.

16 Q. Could you describe the data sources
17 that you used here to create the database?

18 A. Yes, so the primary data sources were
19 from the -- from Cable Data Corporation, or
20 CDC, which digitizes the information about
21 cable systems directly from the Statement of
22 Account forms.

23 The other principal source is
24 information about programs, airings data, and
25 also stations from FYI Television.

1 Q. And does the FYI television database
2 include the information that comes directly
3 from the stations?

4 A. Yes, they do source their scheduling
5 data directly from stations.

6 Q. Let's take a look at Figure 1 in your
7 Exhibit 2016, which is your written testimony,
8 which is on page 4. Does this include a
9 summary of the data that was from that CDC
10 database?

11 A. Sorry; Figure 1 on page --

12 Q. Figure 1 or the screen right in front
13 of you as well. Fancy that.

14 A. Yeah, I was looking at the wrong
15 figure. So Figure 1 here is a summary of the
16 CDC database in terms of the number of Form 3
17 cable systems. And this is an average within
18 each year. And then it's also providing
19 information about the gross receipts and total
20 royalties that were paid within each year.

21 Q. Let's take a look at Figure 2 in
22 Exhibit 206, which is page 5 of your Direct
23 Testimony. What does this figure show us?

24 A. So this figure is giving information
25 about subscriber groups. It's showing for



1 example that the average number of subscriber
2 groups per system were increasing from 2010 to
3 2013. So from roughly three in 2010 to just
4 north of four in 2013.

5 It's also providing information about
6 the average number of communities that were
7 served by subscriber groups and the average
8 number of distant signals that were
9 retransmitted by subscriber groups.

10 Q. And this is all information -- and
11 specifically I wanted to confirm on the
12 subscriber group -- information that you wanted
13 to identify in the database?

14 A. So the information -- so this table or
15 this figure is just summarizing the information
16 about these subscriber groups themselves. The
17 subscriber groups are also contained within the
18 database. The CDC data.

19 Q. Okay. So what is the significance of
20 the subscriber group information?

21 A. So having the information about
22 subscriber groups -- and actually let me step
23 back. The subscriber group allows cable
24 systems to split up their, you know, their
25 channel lineups and their carriage of distant

1 signals based on the subscribers that actually
2 receive those signals.

3 I need you to repeat the question.

4 Q. You answered it.

5 A. Okay.

6 Q. Let's shift to the FYI Television
7 database. Okay? Were you provided the entire
8 program database for the period January 1st,
9 2010, through the end of 2013?

10 A. I was provided with FYI's entire
11 database of programs, stations which broadcast,
12 and network stations, cable stations, and all
13 of the earnings data for that period.

14 Q. Why license the entire database for
15 the four-year period?

16 A. There are a number of benefits to
17 having the entire database. One is there is no
18 need to rely on statistical sampling which
19 could introduce, you know, some uncertainty
20 into -- and imprecision. Also, there are
21 benefits for the categorization of programs.

22 Q. Let's take a look at Figure 3 in
23 Exhibit 2006, which is page 6 of your Direct
24 Testimony. Could you describe these summary
25 statistics for the FYI database?

1 A. So the summary statistics that are
2 displayed here are to give a sense of, you
3 know, the size of the database. It's giving
4 information about the count of broadcast
5 stations IDs, the count of cable station IDs,
6 the number of unique programs in the database,
7 and also the total number of hours of broadcast
8 programming that are in the database.

9 Q. So in specifically the FYI database,
10 it assigns a unique ID for each broadcast
11 station, cable station, and program; is that
12 right?

13 A. Yes, so each broadcast station is
14 assigned a unique station ID. The same with
15 programs. So each unique program is assigned a
16 unique program ID.

17 Q. Why don't you describe why that -- how
18 that information was helpful when you were
19 merging the FYI data with the CDC data.

20 A. It's -- so of that information, it's
21 really the station information that is useful
22 in merging between the databases. So the FYI
23 database has, you know, not only -- we have
24 from the FYI database not only the universe of
25 stations, but those stations can then been

1 mapped to the CDC data which also includes
2 information about individual stations.

3 Q. Then what specific information about
4 stations you've identified here on the FYI
5 database, what specific information about
6 stations did you use getting down into the call
7 sign issue?

8 A. Well, so information about when
9 merging we are looking at four-letter call
10 signs, suffix information. There is additional
11 information including like station affiliate
12 that is in both databases that allow us to, you
13 know, identify the correct matches between FYI
14 and CDC.

15 Q. And did that station affiliate
16 information help you to ensure a higher degree
17 of accuracy?

18 A. Yes, that's correct.

19 Q. Now, did you have any challenges in
20 your merging of the two datasets, the FYI data
21 and the CDC data?

22 A. Yes, there were a number of
23 challenges. For example, the FYI database does
24 not include high definition stations. It
25 includes the standard definition simulcast.

1 And the reason for that is the airings
2 information is common to both, so they are just
3 not maintaining essentially duplicative airings
4 records.

5 So when we looks at CDC data in
6 contrast, we have both high definition and
7 standard definition. We just have to be
8 careful that -- you know, we're pairing up from
9 the CDC the standard definition with the high
10 definition in order to match the correct
11 standard definition version in the FYI
12 database.

13 Q. And this process, that took some time?

14 A. Yes, it did.

15 Q. Let's talk a little bit about your
16 categorization, so first programs then minutes.
17 Now, do you believe that the FYI database
18 contained a rich set of program information
19 that would allow you to categorize the programs
20 in accordance with the defined program
21 categories that we have here in this case?

22 A. Yes, both rich program information and
23 the rich airings information, as well.

24 Q. Did you develop an algorithm that
25 could be used to categorize the programs based

1 upon that information in the FYI database?

2 A. Yes, I did.

3 Q. Why did you need to develop an
4 algorithm?

5 A. Well, so the definitions are a set of
6 rules and, you know, these rules can be, you
7 know, developed in a computer program to more
8 efficiently sort the programs.

9 Q. Did you review the testimony of
10 economists from previous Cable Royalty
11 Proceedings who had used regression analysis to
12 help inform the logic and the rules that you
13 applied and implemented in the database?

14 A. Yes, I did.

15 Q. And which testimony did you look at?

16 A. So I looked at testimony from
17 Dr. Ducey who worked -- it was the '04-'05
18 proceeding. He had done work on categorization
19 that was then used by Dr. Waldfogel in his
20 regression analysis. And I reviewed the -- I
21 think reports from both and also some
22 underlying materials.

23 Q. Now, in that '04-'05 case they used a
24 two-year sample. Do you recall that?

25 A. Yes, they had sampled airings data for

1 the stations.

2 Q. And here you are using a four-year
3 period of the entire dataset; right?

4 A. I'm using the entire database from
5 FYI.

6 Q. Now, by using the entire database, did
7 you have access to certain data that would be
8 unavailable if you were using a sample base
9 that would help you more accurately identify
10 programs by category?

11 A. Yes, I was. So, for example, having
12 all of the airings data for the entire period,
13 or within a given year, allows me to identify,
14 you know, the airings for programs throughout
15 the entire year. So if I'm interested, for
16 example, in identifying whether a program aired
17 on more than one broadcast station, I'm able to
18 track that airing and count the number of
19 stations on which that program aired.

20 The ability to do that is relevant to
21 categorizing the CTV programming where a
22 program is, among other eligibility criteria,
23 it is one and only one broadcast station.

24 Q. So it's something that you could do
25 with the whole dataset, but you wouldn't be

1 able to do it with a sample?

2 A. I could calculate that from a sample,
3 but there is a chance that there would be an
4 error from that calculation, because I would
5 only be able to count the number of airings
6 based on the airings data within my sample, but
7 not outside of it.

8 Q. Let's take a look at Appendix D in
9 Exhibit 2006, which is your page D1 of your
10 Direct Testimony.

11 JUDGE BARNETT: Before we go there,
12 why don't we take our noon recess. We will be
13 at recess until 1:10.

14 (A recess was taken at 12:10 p.m.,
15 after which the hearing resumed at 1:20 p.m.)
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1 AFTERNOON SESSION

2 (1:20 p.m.)

3 JUDGE BARNETT: Please be seated.

4 Should we continue?

5 MR. ERVIN: Yes, Your Honor. Thank
6 you.

7 BY MR. ERVIN:

8 Q. I think we were just about to take a
9 look at Appendix D in Exhibit 2006, so why
10 don't we do that. Turn to page D-1 of your
11 direct testimony.12 Dr. Bennett, can you take a look at
13 Appendix D? Is this the categorization steps,
14 the categorization algorithm, that we've been
15 talking a little bit about?16 A. Yes, Appendix D sets out the sequence
17 of steps in the logic that I apply to
18 categorize the programs.19 Q. Okay. And could you talk a little bit
20 about that step-by-step process, the language
21 in here that you used, "identifying and
22 categorizing" and then removing programs? How
23 does that process work?24 A. Right. So as I said a moment ago,
25 it's a sequential process by which, you know,

1 here in Appendix D, I describe starting with
2 the Big-3 network programming, and I identify
3 those programs first. Then I remove them from
4 the set of programs that require, you know,
5 further review and categorization. And I do
6 that sequentially with each claimant group.

7 Q. Until they're all covered in the
8 process?

9 A. Yes.

10 Q. Okay. Now, were you able to
11 categorize every television programming minute
12 during this four-year period in the data set?

13 A. No. So while I had the entire FYI
14 database, there were still some stations for
15 which I didn't have complete airings data. And
16 those remain uncategorized.

17 Q. So you put them in an uncategorized?

18 A. That's correct.

19 Q. Okay. And did that uncategorized
20 programming account for less than .8 percent of
21 the total station accounting period subscriber
22 group observations?

23 A. Yes, that's correct.

24 Q. Now, is it fair to say that some parts
25 of this categorization process were more

1 straightforward than others?

2 A. Yes, indeed. For example,
3 categorizing PTV programs requires only
4 information about the station on which the
5 program appears. So, you know, if a program is
6 on a non-commercial educational station, it is
7 identified as PTV.

8 I don't need further information about
9 genre or airing type or anything.

10 Q. Okay. And then were there other parts
11 that were a little bit more nuanced?

12 A. Yes. For example, you know,
13 identifying CTV programs requires information
14 about the program itself, but also, you know,
15 how widely aired it was, right? So CTV
16 requires that a program air on no more than one
17 U.S. broadcast station.

18 Q. Okay. Now, let's take a look at
19 Appendix C in Exhibit 2006, which is page C-1
20 of your direct testimony.

21 Now, could you describe a bit about
22 these new fields and confirm, were these some
23 of the fields that you created to help address
24 some of these more nuanced program
25 categorization issues?

1 A. Yes. So these are fields that I
2 calculated from the FYI data and the airings
3 data. So it's -- these are all based on
4 information that's contained within the
5 database. It's just aggregating that
6 information up in a way to make it useful and
7 easy to incorporate into the categorization
8 algorithm.

9 So, for example, at the top, the total
10 number of stations airing a given program ID,
11 so those are unique programs, and I'm able to
12 track the number of stations on which those
13 programs aired to assist with categorizing, you
14 know, CTV versus non-CTV programming, for
15 example.

16 Q. Okay. So you're not adding new data;
17 you are simply adding a calculation shortcut to
18 capture the data within the FYI database?

19 A. That's correct. These are just, as I
20 said, information from within the database, not
21 supplementing it or changing it. It's just in
22 a sense to assist with the categorization
23 logic.

24 Q. Okay. So was it -- is it fair to say
25 that your goal was to accurately categorize the

1 problem -- the programs by category type as
2 accurately as you could?

3 A. Yes, that is the stated goal, yes.

4 Q. So how did you -- how did you refine,
5 enhance the accuracy of the categorization
6 algorithm that's in Appendix D?

7 A. So the -- the algorithm in its
8 development was an iterative process. So what
9 we would do, you know, together with my team,
10 is review which programs were impacted by
11 various rules, you know, identify how they're
12 being moved to which categories and, as part of
13 that review, to identify whether any programs
14 were being moved incorrectly.

15 If that were the case, we would use
16 that to help refine or potentially introduce
17 exceptions where necessary.

18 Q. So did you -- did you export sequel
19 sort of queries to be able to do that on a
20 program-by-program kind of basis?

21 A. Yes. So, where necessary. So, for
22 example, I didn't need to review on a
23 program-by-program basis for programs that were
24 airing on, you know, non-commercial educational
25 stations, but for other claimant categories, we

1 would export lists of programs and review them.

2 Q. Okay. And did this query process help
3 you to determine which category title and genre
4 fields and other program characteristics that
5 were included in the FYI database should be
6 used to help make sure that your algorithm was
7 properly categorizing each program?

8 A. Yes. So as I described, it was an
9 iterative process. So as we would identify a
10 program that, you know, was not or a set of
11 programs that were not being categorized
12 correctly with a given set of rules, you know,
13 I together with my team would look at whether
14 additional data is available or can be created,
15 for example, like the calculation of the total
16 stations, the total number of stations on which
17 a program aired, to assist in refining that
18 categorization.

19 Q. And did you also have the opportunity
20 to review additional information and resources,
21 you know, web sites and other publicly
22 available information, where you had questions
23 about a particular program?

24 A. Yes. There were certainly programs
25 for which I was unfamiliar and I would

1 supplement, you know, the review of programs
2 with, you know, using Google or Wikipedia, you
3 know, finding web sites associated with
4 programs, finding clips of programs on YouTube.

5 You know, this process of trying to,
6 you know, refine and ensure accuracy of the
7 categorization.

8 Q. And then that -- would it be fair to
9 say that the result of that process is then
10 represented in what you decided -- which terms
11 you selected to help identify and categorize
12 the programs?

13 A. Yes, ultimately, where I landed was a
14 result of that -- that iterative process and
15 incorporating everything that I had learned
16 with respect to, you know, accurately and
17 correctly identifying the -- the correct
18 claimant program --

19 Q. So --

20 A. -- category.

21 Q. So did you reach a point where you
22 believed that you had refined it and got it to
23 a place where the algorithm appeared to be
24 accurately categorizing programs?

25 A. Yes. I did. Based on the data that I

1 had available to me, I was confident that the
2 categorization was accurate.

3 Q. Okay. So now after you file your
4 original direct testimony in December of 2016,
5 did you receive copies of reports and
6 underlying materials that were produced by
7 other experts in this case for other claimants?

8 A. Yes, I did.

9 Q. And did you review your categorization
10 again after receiving those additional
11 materials?

12 A. I did, yes.

13 Q. And what did you find?

14 A. So upon reviewing my categorization
15 against that of other experts and, in
16 particular, Dr. Gray, I did uncover some
17 discrepancies between my categorization and
18 his.

19 And, more importantly, what I noted
20 was his reliance on CRTC data and some
21 information that was relevant and potentially
22 useful to refining my categorization.

23 Q. And --

24 JUDGE BARNETT: For the record, could
25 you say CRTC in real words?

1 THE WITNESS: Yes, the Canadian Radio,
2 Television and Retransmission Commission.

3 JUDGE BARNETT: Thank you.

4 BY MR. ERVIN:

5 Q. And telecommunications?

6 A. I'm sorry, telecommunications
7 commission, yes.

8 JUDGE BARNETT: Thank you.

9 BY MR. ERVIN:

10 Q. Once you had access to the information
11 from the CRTC or Canadian Radio, Television and
12 Telecommunications Commission, what information
13 was contained in that data that you did not
14 have before?

15 A. So that data set contains information
16 about the country of origin for a program,
17 which is particularly useful for the
18 categorization of Canadian Claimant
19 programming.

20 Q. Okay. And then so once you had that
21 information, did you decide to make some
22 recategorizations or change the assignment of
23 some of the programs?

24 A. Yes. So with that, armed with that
25 new information, I revisited my categorization,

1 incorporating the additional data, the
2 additional fields, again, with, you know, the
3 stated goal to accurately categorize.

4 And I did, as a result of
5 incorporating that information, refine the
6 Canadian Claimant -- the categorization of the
7 Canadian Claimant programming.

8 Q. Okay. And did you also make a couple
9 of other changes based upon information that
10 you observed from other experts and other
11 underlying materials?

12 A. Yes. The primary change was the
13 revision of the Canadian Claimant category.
14 And as part of that review and moving those
15 programs, there were additional refinements to,
16 I believe, the Devotional and Sports
17 categorizations.

18 Q. And did you -- do you recall what
19 percentage of the programs were affected by
20 this recategorization step?

21 A. I believe it was .2 percent.

22 Q. So .2 percent of the total hours of
23 categorized programming?

24 A. Yes, that's correct.

25 Q. Okay. Let's take a look at Appendix

1 D, page D-5, this is Exhibit 2006, and
2 specifically step D.12, entitled
3 Recategorization.

4 Is this the step in the process where
5 you make your recategorizations you just
6 described?

7 A. Yes. So this step is, you know,
8 incorporating the list of programs that were
9 moved as a result of the revision.

10 Q. Okay. And when you made this
11 recategorization, how did you produce the
12 recategorization? Did you use patch files?

13 A. Yes. So the idea here is to, you
14 know, add this step to the end of the
15 categorization process that I originally
16 produced. The patch form was, you know,
17 similar to a patch for, you know, software,
18 which was to -- you know, instead of requiring
19 other claimants to run through the entire
20 process from start to finish, it's just at the
21 tail end to move the programs according to the
22 revision that I made.

23 There were two patches that were
24 issued, so one was just a list. It's a set of
25 code that would incorporate the list of

1 programs that need to be moved.

2 There was a -- and that was patch A.
3 There was also patch B, which was here is the
4 -- excuse me -- here is the underlying
5 adjustment to the logic. Here is the CRTC data
6 that I relied on.

7 So it was the full step, allowing the
8 other claimants to identify and follow why
9 these changes were being made.

10 Q. And the changes that you just
11 described, were these the ones that you made
12 when you filed your corrected direct testimony
13 in April 2017?

14 A. Yes, that's right.

15 Q. Now, did you learn in early September
16 2017 that one of the claimants' experts,
17 Dr. Erdem, was having a potential replication
18 issue with some of the figures in
19 Dr. Crawford's tables in his written testimony?

20 A. I did learn -- I believe it was
21 September 5th that I became aware of a
22 potential replication issue. My understanding
23 is it was Dr. Erdem that was having difficulty
24 replicating, exactly replicating some of the
25 figures.

1 Q. Okay. And in response to Dr. Erdem's
2 inquiry, what did you determine regarding the
3 updated categorization files, patch A and B you
4 just talked about?

5 A. So what -- so going back and reviewing
6 the patches, it became clear that my team and I
7 had inadvertently included an additional
8 handful of lines of code. These were -- these
9 were code that were remnants of a robustness
10 check. And they had -- so their inclusion had
11 a slight impact on some of the figures in the
12 reports.

13 Q. Okay. Now, were you able to assess
14 the impact of the extra lines that were in the
15 categorization patch on the replication?

16 A. Yes. So the robustness check itself
17 and these lines of code that they were -- you
18 know, that they were examining had, you know,
19 no real impact on the figures. For example, I
20 do recall that -- I believe it's Figure 20 in
21 Dr. Crawford's report, the shares were -- a
22 handful of the shares, not even all the shares,
23 were impacted by at most one-100th of
24 a percent.

25 Q. Okay. So did you remove the code from

1 the patch files and then prepare that revised
2 version of the patch files?

3 A. Yes, we did remove the additional
4 lines of code, and we reissued the patches.

5 Q. Okay. And did you run it to make sure
6 that it replicated exactly?

7 A. Absolutely, yes.

8 Q. The figures?

9 A. Yes, I checked. And every figure and
10 every report replicated exactly.

11 Q. Okay. So let's turn for a moment to
12 your categorization of program minutes in the
13 database.

14 Did you separately categorize
15 compensable and non-compensable programs that
16 distantly aired on WGNA?

17 A. Yes, we -- I did identify separately
18 compensable from non-compensable for the WGNA
19 programs.

20 Q. Let's take a look at Figure 5 in
21 Exhibit 2006, which is on page 9 of your direct
22 testimony. Why don't you describe what this
23 snapshot provides and how it influenced the
24 process you used to identify compensable and
25 non-compensable programs on WGNA.

1 A. Right. So with the entire airings
2 data for each year, you know, I was able to
3 conduct this process here, which is essentially
4 lining up the programs side-by-side on both
5 stations, identifying instances where the same
6 program aired on both, and then flagging that
7 as compensable.

8 Q. Okay. And just a note, the program
9 that appears at 3:00 o'clock, WGN News at Nine,
10 that looks like it is appearing at 3:00 instead
11 of 9:00.

12 Would you note the time reference
13 there, the time zone difference?

14 A. It's -- yeah, this is UTC, so there is
15 a six-hour offset, I believe there.

16 Q. Okay. Let's take a look at page -- at
17 Appendix D-10, sorry, step D.10 in Appendix D,
18 which is on page D-5 of your testimony,
19 Exhibit 2006.

20 Is this the step in your
21 categorization process where you're making the
22 compensable programming on WGNA flag?

23 A. Yes, it is.

24 Q. Now, did Dr. Crawford ask you to
25 identify duplicative network programming

1 minutes in the database?

2 A. Yes, he did.

3 Q. Let's take a look again here in
4 Appendix D but at step D.11. Is that a
5 description of the process that you used for
6 identifying duplicative network airings?

7 A. Yes, it is.

8 Q. Okay. And describe that process, just
9 a bit, if you would.

10 A. Sure. So in the FYI database, I was
11 also provided with the network data, so I knew
12 what was being fed by individual networks. And
13 using that data, I would look within a
14 subscriber group at, you know, pairs of
15 stations and, in particular, for a distant
16 station, pairs of distant stations or a distant
17 and a local to see whether those pairs of
18 stations were both airing at the same time a
19 program that was being fed by one of these
20 networks.

21 You know, having identified
22 simultaneous airings of these network programs,
23 I would flag them, allowing, you know, others
24 to then work and identify them directly from
25 the flag.

1 Q. Okay. So, Dr. Bennett, based on your
2 work on the categorization process and your
3 implementation of the database, do you have an
4 opinion regarding the accuracy and reliability
5 of the information that compiles this database,
6 this combined CDC and FYI database?

7 A. Yes. I believe that, you know, after
8 extensive review on my own and also, you know,
9 after comparing my categorization to that of
10 other experts and their data sources, I'm
11 confident that the categorization accurately
12 reflects the -- you know, the correct
13 assignment of programs to their claimant
14 categories.

15 Q. Okay. Now, I want to move to a
16 different part of your testimony, and that was
17 calculations we talked about before, and ask
18 you a couple of questions about those.

19 If we can first go to Figure 6 in
20 Exhibit 2006, which is page 11 of your direct
21 testimony. Now, does this figure contain a
22 summary of the distance calculations you were
23 asked to do between the location of broadcast
24 stations and the cable communities that
25 received their programming as distant signals?

1 A. Yes, it is.

2 Q. Okay. Could you just describe briefly
3 the process that you used to make those
4 calculations?

5 A. Sure. So what -- the data that's
6 being used in this table is based on, you know,
7 the information about distant signals and the
8 communities to which they were imported.

9 So for each of those pairs, I obtained
10 coordinates, so latitude and longitude, and
11 then used those coordinates to calculate the
12 distance between the community and the station.

13 Q. Okay. And were you instructed to
14 exclude the four historical super-stations,
15 WGN, WPIX, WSBK, and WWOR, from this analysis
16 that you did?

17 A. Yes, that's correct.

18 Q. Okay. And when you did the
19 calculations, what did the data show you?

20 A. So the data here, right, it's distance
21 in miles bucketed by 50 or under, 50 to 100, et
22 cetera. When you look at the far right
23 columns, the cumulative percentages in each
24 year, I think what's really notable here is the
25 fact that, you know, more than 90 percent of

1 all station community pairs are within 150
2 miles.

3 Q. Okay. Let's take a look at what's in
4 your binder there as -- pardon me --
5 Exhibit 2003, which was Ms. Burdick's
6 testimony. And I want to ask you about the
7 maps that are in the back, her Exhibits A-1,
8 A-2, and A-3. That first one there that you
9 see on the screen is Burdick Exhibit A-1 from
10 Exhibit 2003.

11 Did you calculate this map and prepare
12 it?

13 A. Yes, I did prepare this map.

14 Q. And does this map show the geographic
15 concentration of distant system carriage for
16 certain television stations; in this case, WSBT
17 in South Bend, Indiana?

18 A. Yes, the map shows the location of
19 WSBT and the communities, I believe it's in
20 northwestern Indiana, you know, to which that
21 WSBT signal was imported.

22 Q. And what data did you look at to
23 create this map?

24 A. So this is the same underlying data
25 that I used to calculate the distances. Here

1 I'm taking the coordinates from that earlier
2 analysis and then plugging them into an S&L
3 Kagan mapping software.

4 Q. Okay. And there are two maps that
5 follow. Let's just look at them real quick.
6 You can look at them in the book there, A-2 or
7 WDBJ in Roanoke, Virginia, and then
8 Exhibit A-3, after that, which is KYTV in
9 Springfield, Missouri.

10 The same application to each of these,
11 the process you just described?

12 A. The same process, yes.

13 Q. Okay. Let's take a look at Figure 26
14 in Exhibit -- pardon me, let's take a look at
15 Figure 25 in Exhibit 2007. So this is your
16 rebuttal testimony.

17 And this is a chart that Ms. Shagrin
18 was just referring to during her testimony.
19 Did you prepare this chart, this graph?

20 A. Yes, I did.

21 Q. Okay. And just describe, if you
22 would, how you -- the information you looked at
23 and how you made the calculations to create the
24 graph.

25 A. So this is using information on

1 carriage from the CDC data and is showing, you
2 know, the relationship between the average
3 number of distant stations that were carried in
4 relation to the number of local stations that
5 were carried.

6 Q. Okay. And let's take a look next at
7 Figure 26, which is in Exhibit 2007. This is
8 page 28 of your rebuttal testimony.

9 This is another graph that we were
10 looking at during Ms. Shagrin's testimony. Did
11 you prepare this as well?

12 A. Yes, I did.

13 Q. Okay. And the additional line that
14 you added, could you describe a little bit
15 about how you made those calculations?

16 A. Yes. So here it's the relationship
17 between local carriage and DMA market size,
18 which is shown by the blue line. The other
19 relationship that's depicted here is the
20 carriage of distant stations in relation to the
21 DMA ranking of market size.

22 JUDGE FEDER: Excuse me. Can you
23 explain what the numbers along the horizontal
24 axis mean?

25 THE WITNESS: So these are the DMA

1 rank from 1 to 30. So it would be the top 30
2 DMA markets.

3 JUDGE FEDER: So if you rank the
4 markets by number of subscribers, viewers?

5 THE WITNESS: This is the Nielsen DMA
6 ranking itself.

7 JUDGE FEDER: So it's viewership,
8 right?

9 THE WITNESS: I -- I actually would
10 have to double-check on how they -- what
11 exactly the criteria is that they're using to
12 define those -- the market -- DMA ranking,
13 excuse me.

14 JUDGE FEDER: Okay.

15 THE WITNESS: Does that --

16 JUDGE FEDER: So it is -- but it is a
17 -- it is a ranking, so the market size doesn't
18 necessarily decrease linearly?

19 THE WITNESS: Correct, correct. This
20 is just -- it's just an ordinal ranking,
21 bucketing the largest 30, the next large 30,
22 but that information is not, you -- yeah,
23 that's right.

24 JUDGE FEDER: Thank you.

25 BY MR. ERVIN:

1 Q. And just to be clear, to make sure
2 that's -- on the left side of that horizontal,
3 the 1 through 30, those are the largest DMAs.
4 And then in descending order, your buckets go
5 up to 181 to 209; is that right?

6 A. That's correct, yeah.

7 Q. Okay. All right. Now I want to ask
8 you some questions about your review of
9 Dr. Gray's testimony. You reviewed his
10 testimony in this case; is that right?

11 A. I reviewed -- yes, I reviewed
12 Dr. Gray's testimony.

13 Q. His direct testimony --

14 A. Yes.

15 Q. -- in this case, right?

16 A. Yes.

17 Q. Now, did you also review the
18 supporting data and files that were produced by
19 Dr. Gray?

20 A. Yes, I reviewed all of Dr. Gray's
21 underlying materials.

22 Q. Let's take a look at page 2 in
23 Exhibit 2007, which is your rebuttal testimony.
24 I want to ask you first, is it your opinion
25 that Dr. Gray has not reliably measured

1 relative program distant viewership based upon
2 your review?

3 A. Yes, that's my opinion.

4 Q. And is it -- is that your opinion
5 because you believe that Dr. Gray's sample
6 design creates bias in his estimations?

7 A. It's my opinion that the sampling
8 design and the implementation of that sampling
9 design gave rise to bias and imprecise
10 estimates that undermine the reliability of his
11 relative distant viewership.

12 Q. And is it further your opinion,
13 because you believe that Dr. Gray's distant
14 viewership study and the methodology that he
15 used creates uncertainty, greater uncertainty,
16 as a result of his estimation method and the
17 lack of sufficient distant viewing data?

18 A. Yes. The methodology and the use of
19 imputation -- I -- yeah, maybe can you repeat
20 the question.

21 Q. Sure.

22 A. Just so I state -- yes.

23 Q. I'm trying to identify the uncertainty
24 that you talk about in your rebuttal testimony.
25 Does the uncertainty about the methodology that

1 Dr. Gray uses results from both his method, as
2 well as a lack of sufficient distant viewing
3 data?

4 A. Yes, that's correct.

5 Q. And then, finally, in support of that
6 opinion that you stated, is it supported by
7 your belief that Dr. Gray overstates the
8 precision of his results in his direct
9 testimony?

10 A. Dr. Gray overstates the precision of
11 his distant viewership shares but doesn't state
12 or offer any assessment of precision for the
13 program shares.

14 Q. Okay. Let's turn to each of these
15 three. First, let's start with the sampling.

16 Does Dr. Gray rely on sampling in his
17 analysis?

18 A. Yes, he does.

19 Q. And does he draw a sample of stations?

20 A. Yes, he does.

21 Q. Now, are Claimants' programs randomly
22 assigned to those stations?

23 A. No, they are not. Excuse me. The
24 Claimants' programming is highly clustered by
25 station type.

1 Q. Let's take a look at Figure 1 in
2 Exhibit 2007, which is on page 6 of your
3 rebuttal testimony. What does Figure 1 show
4 us?

5 A. Figure 1 is showing the distribution
6 of categorized programs on average across the
7 different station types as reported in the CDC
8 data. And, in particular, what it shows is the
9 -- the high degree of clustering or high degree
10 of concentration of Claimants' programming, for
11 example and not surprisingly, you know, the
12 bulk of -- or all of the Canadian minutes
13 appear on the Canadian stations, all of the PTV
14 programming appears on the educational
15 stations.

16 And among the other station types,
17 there is varying degrees of concentration for
18 the other Claimants as well.

19 Q. Okay. So you're saying that based
20 upon this figure, which shows the breakdown by
21 program category of the programs on the
22 different station types that Dr. Gray had to
23 select from, that the programs are going to
24 vary pretty widely, depending upon which
25 stations he includes in his sample; is that

1 right?

2 A. That's correct.

3 Q. Okay. Now, was each station equally
4 likely to be selected in Dr. Gray's sample?

5 A. No, they were not. Dr. Gray
6 stratified the stations based on the number of
7 distant subscribers as reported in the CDC
8 data.

9 Q. And so does he assign a different
10 sampling weight to the stations?

11 A. That's correct. As part of the
12 stratification process, he assigns a sampling
13 weight to each station.

14 Q. How did Dr. Gray determine which
15 stations to include for sampling and their
16 sampling weights?

17 A. Dr. Gray relied directly on the list
18 of distantly retransmitted stations as reported
19 in the CDC data.

20 Q. So what you've described so far, what
21 kind of sampling design are we talking about
22 that Dr. Gray used here?

23 A. So, formally, it would be referred to
24 as stratified cluster sampling.

25 Q. Okay. Now, did you have some issues

1 with the station list that Dr. Gray relied on;
2 in other words, the sampling frame that he
3 used?

4 A. Yes, I did.

5 Q. What were some of your concerns about
6 it?

7 A. So the -- the issue in the sampling
8 frame, which is the list of stations from which
9 he's going to draw his sample, the issue there
10 is that Dr. Gray created that list directly
11 from the underlying CDC data without any
12 editing of it.

13 The reason why editing would be
14 necessary is because this list as reported to
15 the CDC depends on the cable operators'
16 reporting of the distant signal. And so there
17 are a number of instances where the identity --
18 you know, the exact same station is being
19 reported in slightly different ways; for
20 example, you know, with and without a suffix.
21 And having both of those included in the
22 sampling frame, despite being the exact same
23 station, creates an issue.

24 Q. Well, let's take a look at one of
25 those examples in Figure 4 in Exhibit 2007,

1 which is page 10 of your rebuttal testimony.

2 Is the highlighted references under
3 the 2010 column one of those examples you're
4 talking about?

5 A. Yes. So this is actually in
6 Dr. Gray's sample itself. So a moment ago, I
7 was describing the list, the sampling frame
8 from which he drew his stations. And here is
9 the actual list of the sampled station
10 demonstrating that CBUT-DT, which is identical
11 to CBUT, were both drawn into the sample,
12 despite being the exact same station, because
13 those two different naming conventions were
14 used in the underlying CDC data.

15 Q. That was the kind of -- that was the
16 same station call sign issue you talked about
17 before when you were talking about merging the
18 FYI and the CDC data together to make sure that
19 the stations aligned, right?

20 A. Correct. This is exactly the same
21 type of issue, where, you know, I had to work
22 hard to ensure that I was correctly mapping
23 stations from CDC to FYI, yes.

24 Q. So what's the impact of Dr. Gray
25 allowing duplicate stations to be in his

1 sample?

2 A. So the impact of this type of error in
3 a sampling frame would give rise to possible
4 distortions that could create biases in the
5 sample, making the sample non-representative of
6 the population.

7 JUDGE BARNETT: Dr. Bennett, do you
8 have information about whether CBUT-DT and
9 CBUT, the subscriber numbers, come from the
10 same source? Are they both coming from CDC
11 data or FYI data? Where is that information
12 coming from?

13 THE WITNESS: So the distant
14 subscribers numbers are a construct of the --
15 from the CDC.

16 JUDGE BARNETT: Okay.

17 THE WITNESS: They created that
18 variable, yes.

19 JUDGE BARNETT: So is the actual
20 number for CBUT 900,000 or a million, adding
21 those two together? Or is there some screwy
22 overlap that means the number is something
23 other than either one of these numbers?

24 THE WITNESS: No, there's no overlap
25 between them. So if you wanted to -- you know,

1 if you were inclined to treat this as, you
2 know, the other stations are being treated, you
3 should add those together.

4 JUDGE BARNETT: Okay, thank you.

5 BY MR. ERVIN:

6 Q. But the programming on both of those
7 stations is identical?

8 A. That's correct.

9 Q. Now, based upon your review of
10 Dr. Gray's data, did he have program data for
11 all the stations that he included in his
12 sample?

13 A. No, he did not. He drew his sample
14 and then identified, you know, or determined
15 whether he had data for those sampled stations.

16 Q. Let's take a look at Figure 5 in
17 Exhibit 2007. This is on page 10 of your
18 rebuttal testimony. Why don't you describe for
19 us what is here in Figure 5.

20 A. All right. So Figure 5 is showing the
21 number of stations by year in Dr. Gray's
22 sampling frame, so that's the list that he
23 sampled from. The second -- sorry, excuse me,
24 the third column, sampled stations, is the
25 number of stations that he drew into his

1 sample, including duplicates. And the final
2 column is the number of those stations for
3 which he actually had airings in program data.

4 Q. So what's the impact of not having the
5 program data for all those stations he selected
6 for his sample?

7 A. So the potential impact is, you know,
8 possibly a distortion of, you know, the
9 sampling weights and, again, you know, creating
10 the possibility of introducing biases.

11 Q. Now, is it your opinion that from what
12 you've seen so far and what we've talked about
13 so far, that it's likely that Dr. Gray's use of
14 cluster sampling with unequal sample weights
15 produced potentially biased samples?

16 A. I -- so based on the sampling design
17 and the degree to which programs are clustered
18 by station type, there's certainly the
19 possibility of biases being introduced through
20 this process.

21 Q. Okay. Could Dr. Gray have examined
22 his sample for bias at this point?

23 A. Yes, he could have.

24 Q. What information would have been
25 available to him to do that?

1 A. Well, for example, we know in the
2 population the number of stations by type. So
3 within the population of retransmitted distant
4 signals, we know how many were educational, we
5 know how many were independent.

6 Based on the sample that's drawn, you
7 can extrapolate from that sample to see whether
8 you match in the population on those types of
9 characteristics.

10 Q. And did you conduct that exercise?

11 A. I did.

12 Q. Let's take a look at Figure 10 in
13 Exhibit 2007, which is page 12 of your rebuttal
14 testimony. Explain for us, Dr. Bennett, what
15 -- what this figure shows from that comparison?

16 A. So the figure here is looking, in
17 particular, at the educational stations that
18 were retransmitted in each year. It shows, by
19 the blue bars, the proportion of all
20 retransmitted stations that were educational.

21 And then the green bars are the
22 proportion that Dr. Gray would estimate based
23 on his methodology and from his sample. And
24 the results here are showing that Dr. Gray's
25 extrapolation would be biased downwards for the

1 educational shares, and here I mean by the
2 share of educational stations, they would be
3 biased downward in 2010, '11, and 2013 and then
4 biased upwards in 2012.

5 JUDGE STRICKLER: Excuse me, sir. You
6 used educational stations to make your point.
7 Was that by way of example or is that the only
8 category in which it occurred or you don't
9 know?

10 THE WITNESS: I -- I looked at more
11 than just the educational stations. The
12 educational station to me was the most
13 prominent example to look at because of the
14 one-to-one mapping between the categorization
15 of programs and the station type.

16 So for educational stations, it is the
17 only place where you're going to find PTV
18 programming.

19 JUDGE STRICKLER: But you said you
20 looked in the other categories as well and the
21 biased was not as pronounced?

22 THE WITNESS: I looked at other
23 categories and the bias -- I also looked at the
24 independent stations and the share there as
25 well. And there the bias is also pronounced

1 there.

2 JUDGE STRICKLER: As pronounced as you
3 show in Figure 10 for educational stations?

4 THE WITNESS: We can --

5 MR. ERVIN: We can take a look at it
6 right now, Your Honor. That was going to be
7 the next figure, Figure 11.

8 JUDGE STRICKLER: If it's already in
9 the report for sure, yeah, let's go to that.

10 BY MR. ERVIN:

11 Q. As Judge Strickler just asked and as
12 you were referencing, independent stations, is
13 this a representation of your comparison for
14 independent stations in Dr. Gray's sample?

15 A. Yeah, that's correct. So this is the
16 analogous exercise, now asking, you know, based
17 on the shares of independent stations whether,
18 you know, Dr. Gray's sample or, excuse me,
19 extrapolating from Dr. Gray's sample, using his
20 methodology, you arrive at the same point or
21 the same proportion as in the population.

22 And here we see in contrast to the
23 educational stations that Dr. Gray's
24 extrapolation for the share of independent
25 stations is biased high in 2010, biased high in

1 2011, and biased high in 2013. And then in
2 2012 it's biased low.

3 Q. Okay. So based on what we've seen so
4 far, Figure 10, the educational stations, and
5 Figure 11, what type of programming is more
6 predominant on independent stations, what's
7 featured here in Figure 11?

8 A. This would be Program Suppliers.

9 Q. Okay. So in Figure 10, we were
10 talking about PTV category of programming; in
11 Figure 11, we were talking about potential
12 impacts on Program Supplier category of
13 programming. What's the potential impact of
14 over- or under-sampling?

15 A. Can I just add something to my
16 previous?

17 Q. Oh, yeah, sure.

18 A. So this -- you know, this bias --
19 these biases here would impact not only Program
20 Suppliers but other Claimant minutes as well.

21 Q. Yeah, actually, that's a good point.
22 Why don't we spend a minute there.

23 So when we're talking about having
24 less than what is representative in the
25 calculation or more, it's not just the type of

1 programming we're talking about here that's
2 impacted by that; is that what you are saying?

3 A. Yeah, but it's also the fact that if
4 you're -- these are shares. So if you've
5 over-estimated one share, you must, by
6 definition, have under-estimated on another
7 share.

8 So this is just -- you know, there are
9 definite biases that are introduced here by
10 this.

11 Q. Okay. So that on these two figures
12 and thinking about the over- and
13 under-sampling, what's the potential impact on
14 that sampling by station type that Dr. Gray
15 does here?

16 A. Can you repeat the question?

17 Q. Sure. So you've described these, at
18 least these two examples, right, where there's
19 -- you see over-sampling and under-sampling.
20 What's the potential impact of that on the
21 estimations that Dr. Gray makes?

22 A. Right. So in terms of program shares,
23 the clearest, I think, example would be the --
24 you know, for example, the PTV minutes, the PTV
25 programs. They're -- they only appear on the

1 educational stations.

2 So if you overestimate educational
3 stations or the share of educational stations,
4 you're going to overestimate the share of PTV
5 programming. If you underestimate the share of
6 educational programming -- excuse me, stations,
7 you're going to underestimate the share of PTV
8 programming.

9 Q. Okay. Let's talk a little bit about
10 precision observations that you've had --
11 you've made, and take a look at Dr. Gray's
12 Table 1, which is in Exhibit 6036, which is on
13 page 16 of his direct testimony.

14 Now, this is Table 1, where the levels
15 and shares of retransmissions and volume are
16 presented by Dr. Gray; is that right?

17 A. That's correct.

18 Q. And now, did Dr. Gray estimate the
19 numbers and the shares of programs and program
20 minutes for each Claimant based from his
21 samples?

22 A. Yeah, that's correct. These are
23 estimates from his samples.

24 Q. Okay. Now, did Dr. Gray assess the
25 precision of these estimates?

1 A. Not that I'm aware of. Dr. Gray did
2 not report any measure of precision attached to
3 any of these estimates in his testimony.

4 Q. Now, were you able to assess the
5 precision of these estimates and calculate --
6 and make calculations on that?

7 A. Yes, I was.

8 Q. Let's take a look at Figure 13 in
9 Exhibit 2007, which is page 14 of your rebuttal
10 testimony. And is this an example of one of
11 the margins of error calculations you made on
12 those estimations that were in Table 1 of
13 Dr. Gray's direct testimony?

14 A. Yes. So Figure 13, the calculations
15 that I performed first reproduced all of
16 Dr. Gray's estimates of the program shares.
17 And I supplemented that calculation with the
18 precision attached to those estimates. And
19 here precision is measured by the margin of
20 error at the 95 percent confidence level.

21 Q. And -- but, functionally, like
22 practically, how do you make those sorts of
23 calculations? What do you use?

24 A. The -- so the statistical software
25 that Dr. Gray used to calculate his shares, I

1 provided that software with the information
2 about his sampling design, and the statistical
3 software is, you know, preprogrammed to output
4 these types of precision measures.

5 Q. Okay. So once you provide the
6 sampling design -- which I think you called
7 earlier stratified cluster sampling; is that
8 right?

9 A. That's correct.

10 Q. And then it produces these
11 estimations, these margins -- the calculations
12 of margins of error; is that right?

13 A. Yes, that's correct.

14 Q. Okay. Now, can we compare your
15 calculations that you made to the sampling
16 issues to the shares? And that's what we're
17 doing here with your Figure 10 and your Figure
18 13.

19 A. Yes. So this is back to the earlier
20 comments I made about the likely bias in shares
21 arising from the non-representativeness of
22 Dr. Gray's sample by station type. So what's
23 -- what's being illustrated here is, back in
24 Figure 10, it was clear that in 2010, 2011, and
25 2013, that Dr. Gray's sample and the

1 extrapolation from it was biased low; whereas
2 in 2012, it was biased high.

3 If we look at the column in the figure
4 below in Figure 13 and walk down the estimates
5 for PTV and we see 24.48, 22.1, and then in
6 2013, 26.93, these are in stark contrast to the
7 40.14 that's reported in 2012.

8 And that pattern is entirely
9 consistent with the biased low, biased low,
10 biased high, biased low pattern that's
11 established in Figure 10.

12 Q. Let's talk a bit about Dr. Gray's
13 methodology, sort of what he -- what he's doing
14 in his distant viewing methodology.

15 Now, do you understand that Dr. Gray
16 was taking what data he could get from Nielsen
17 and then calculating an estimation of distant
18 viewing based upon a comparison of local to
19 distant viewing in the data that he had?

20 A. Dr. -- yes, so Dr. Gray had available
21 to him a sample of distant viewing for a small
22 share of the quarter-hours that were of
23 interest to him in his analysis. Dr. Gray
24 constructed an econometric model to estimate
25 the distant viewing where it was unavailable in

1 the original records he was provided with.

2 And he also ultimately used that same
3 model to not only impute the records for where
4 he didn't have any, but he also used that same
5 model to impute records that were already
6 available to him in the Nielsen data.

7 Q. Okay. Let's talk about the data
8 first. So what distant viewing data from
9 Nielsen was Dr. Gray provided?

10 A. Dr. Nielsen -- sorry, excuse me --
11 Dr. Gray was provided with household counts for
12 some of the stations and quarter-hours in his
13 database.

14 Q. And by "some," do you mean less than
15 7 percent of what was in his sample?

16 A. That is correct. In every year, it
17 was less than 7 percent of the records.

18 Q. Now, did Dr. Gray determine whether
19 the distant viewing data he received from
20 Nielsen was sufficient?

21 A. My understanding of his report, you
22 know, given that Dr. Gray took it upon himself
23 to impute records where he didn't have them, is
24 -- is that Dr. Gray himself did not feel he had
25 adequate data to perform his share -- distant

1 viewing share calculations.

2 Q. So does he say that he doesn't have
3 sufficient data of the distant viewing to rely
4 only on the distant viewing data that he had?
5 Is that right?

6 A. That was a little tricky.

7 Q. I'm not trying to be tricky.

8 A. No, no, I know. Can you repeat that?

9 Q. Sure. I was just -- I'm just asking
10 about the sufficiency. Does he say in his
11 testimony that he doesn't have enough distant
12 viewing data to use just that information?

13 A. I don't recall that exact language in
14 his report.

15 Q. Okay. So -- so what he -- let's talk
16 about what he does.

17 A. Um-hum.

18 Q. So after he makes that determination,
19 how does he try to calculate the level of
20 distant viewing?

21 A. So this is back to the econometric
22 model for -- so Dr. Gray builds an econometric
23 model purportedly capturing the relationship
24 between local viewing and distant viewing. And
25 it's based on the records that he had available

1 to him in the -- from Nielsen.

2 In addition to that, where he didn't
3 have data from Nielsen, Dr. Gray first imputes
4 zeros for those records. And so for his
5 econometric model, when estimating this
6 relationship, it's based on data from Nielsen
7 and, more often than not, zeros that he
8 imputed. Based on the relationship estimated
9 from that data, so both the Nielsen records and
10 his own imputed values, Dr. Gray, you know,
11 based on that estimated model then imputes
12 records, so these are estimates coming out of
13 that model, for each and every record.

14 Q. Okay. Let's break it down. Let's
15 talk about the data first.

16 A. Um-hum.

17 Q. Let's look at Figure 16 in
18 Exhibit 2007, which is page 18 of your rebuttal
19 testimony. Would you describe what's
20 represented here in the summaries.

21 A. So this is a summary of the total
22 programming by quarter-hours in Dr. Gray's
23 database by -- by year. So it's always north
24 of 4 million quarter-hours.

25 And the Nielsen -- the Nielsen data

1 that's provided to Dr. Gray is at the
2 quarter-hour level. It's a count of households
3 at a given quarter-hour.

4 Now, the percent with no distant
5 viewing record, that's showing that for more
6 than 93 percent of the quarter-hours in his
7 database, Dr. Gray had no record of distant
8 viewing from Nielsen. And the far column on
9 the right shows that, in addition to having no
10 distant viewing records for many of the
11 quarter-hours, Dr. Gray was also without local
12 viewing records for more than, you know,
13 58 percent of those records in any given year.

14 Q. And in your opinion, does that
15 introduce the potential for uncertainty in the
16 estimations that are based upon that level of
17 data or that -- that lack of level of data?

18 A. Any analysis that would be based on,
19 you know, a calculation where more than
20 90 percent of records are imputed would, in my
21 opinion, be imprecise and -- yeah.

22 Q. Let's take a look at Figure 17 in
23 Exhibit 2007. This is on page 19 of your
24 rebuttal testimony.

25 So this looks like a representation of

1 the data but just broken down. Could you
2 describe this, please?

3 A. So this is showing the data that
4 Dr. Gray included in his regressions. So if
5 you remember, Dr. Gray is purportedly, you
6 know, estimating the relationship between
7 distant and local viewing.

8 Now, these are the -- these are the
9 counts of records that he included in his
10 regressions. In 2010, for example, nearly 1.8
11 million records that are included in the
12 regression have no observation for either local
13 or distant viewing.

14 Q. In the Nielsen data that he got?

15 A. Yes, the Nielsen did not provide him
16 with any records for those quarter-hours.

17 Q. Okay. And you mentioned before that
18 he replaced those no observations with zeros;
19 is that right?

20 A. That's correct. For the distant --
21 the counts of distant households, Dr. Gray
22 first replaced missing with zeros before
23 estimating his model.

24 Q. Now, were you able to determine, from
25 your review of the files and the materials,

1 whether the zero came on the Nielsen-provided
2 information or the zeros were provided by
3 Dr. Gray?

4 A. There were -- there were no zeros,
5 zero counts of households. The Nielsen data
6 for household counts was, you know, a positive
7 number or there was no record.

8 Q. Okay. Now, do you agree with
9 replacing the zero counts -- or the no
10 observations with zero?

11 A. For this purpose, I do not agree with
12 this replacement. Here Dr. Gray is, you know,
13 estimating a model where he imputes a zero,
14 only later to, again, impute the value using a
15 prediction out of that model.

16 And either the zero is correct, in
17 which case there's no point for the imputation,
18 or the zero is incorrect and you've introduced
19 incorrect data to inform the regression model,
20 which invariably would bias the results.

21 JUDGE STRICKLER: I have another
22 question for you with regard to Figure 17 that
23 we're looking at.

24 In the third row, it says missing
25 distant "no" and missing local "yes," is that

1 the one where he had distant data but replaced
2 it and imputed it with numbers that he got from
3 his regression?

4 THE WITNESS: So the third row, he's
5 missing distant. He does impute those records
6 based on his regression results. And --

7 JUDGE STRICKLER: In the third row,
8 he's not missing distant, right?

9 THE WITNESS: Oh, excuse me, I'm
10 sorry. I misread that.

11 So, yes, so the missing -- in the last
12 -- in the third column, he has those distant
13 records, but --

14 JUDGE STRICKLER: Third row, you mean?

15 THE WITNESS: Yes, sir, excuse me.
16 The third row, he has distant records, but he
17 does replace those with the imputations, with
18 the estimates from his regression.

19 JUDGE STRICKLER: That's the
20 replacement of spoke of earlier in your
21 testimony?

22 THE WITNESS: That's correct.

23 JUDGE STRICKLER: Thank you.

24 BY MR. ERVIN:

25 Q. Now, Dr. Bennett, did you examine

1 Dr. Gray's imputed measure of distant
2 viewership and compare that against the viewing
3 records provided by Nielsen for specific
4 stations included in Dr. Gray's sample?

5 A. Yes, I did perform that type of
6 analysis.

7 Q. Let's take a look at Figure 19, which
8 is in Exhibit 2007 on page 22 of your rebuttal
9 testimony. Please describe what this shows us.

10 A. So Figure 19 is a comparison of
11 distant viewing household quarter-hours based
12 on information in the Nielsen data, so that
13 would be the column Nielsen. It should be
14 Nielsen. Those -- so there was no -- for this
15 particular station, there was no record of any
16 distant viewing in any of the 2010 to 2012
17 period. 2013, the station wasn't sampled, so
18 that's not included here, but for 2010 to 2012,
19 there was no information.

20 And so in terms of counts, from no
21 information, I just reported there were no
22 records, zeros here. In contrast, from
23 Dr. Gray's imputation, there are fairly large
24 counts of -- you know, of viewing based on his
25 imputations.

1 Q. Let's take a look at Figure 20 in
2 Exhibit 2007, which is page 23 of your rebuttal
3 testimony. Does this one show a different
4 scenario when you compare the Nielsen
5 observations against Dr. Gray's estimations?

6 A. Yes, so here in Figure 20, what it's
7 showing is that the counts of distant viewing
8 household quarter-hours is, in fact, quite a
9 bit higher in the underlying Nielsen data than
10 what Dr. Gray produces through his imputation
11 methodology.

12 So, in other words, for this station,
13 viewers or counts of households by
14 quarter-hours are actually being eliminated
15 relative to Dr. Gray's or by Dr. Gray's
16 imputation.

17 Q. So is it your view that this, you
18 know, less than what -- more than what was
19 actually observed and then maybe even less than
20 what was actually observed scenarios creates
21 further uncertainty into the imputations that
22 are made by Dr. Gray?

23 A. Yes, you know, to me certainly,
24 there's no basis for eliminating records, you
25 know, from the underlying data. It's -- it's

1 also the -- you know, here an instance where
2 you're actually below what you started with.
3 You know, presumably, you're -- there are also
4 instances where you're above. It's not clear,
5 you know, in terms of like the biases, what
6 this would introduce to the -- to the final
7 calculations or the ultimate calculations.

8 Q. Okay. Let's take a look at Figure 22,
9 also in Exhibit 2007, which is page 24 of your
10 rebuttal testimony.

11 Now, does this aggregate show sort of
12 a roll-up, if you will, of what you just showed
13 us in the first two figures for all of the
14 stations that were included in Dr. Gray's
15 sample?

16 A. Okay. So Figure 22 is summarizing the
17 impact that the imputation has on shares of the
18 distant household quarter-hours. And it's --
19 so this would be, you know, Nielsen records
20 relative -- so the shares based on the Nielsen
21 records relative to the shares based on
22 Dr. Gray's imputation.

23 And it's showing that the shares based
24 on Dr. Gray's imputation fall for the Canadian
25 CTV and the PTV Claimants in 2010. You know,

1 in 2010, the CTV shares fall by 11.23 percent,
2 you know, relative to what was actually
3 reported by Nielsen. In contrast, again in
4 2010, Program Suppliers go up by nearly
5 12 percent relative to what was actually
6 reported by Nielsen.

7 Q. Okay.

8 JUDGE BARNETT: Dr. Bennett, Nielsen
9 doesn't categorize, does it, by Canadian,
10 Commercial TV, Devotional? That's something
11 that the economists do when they receive the
12 raw Nielsen data?

13 THE WITNESS: That's correct. So --

14 JUDGE BARNETT: Okay. So how do you
15 know which -- what the differences were by
16 category? Is that by comparing to how you
17 categorized them versus how Dr. Gray
18 categorized it, or how did you come up with
19 these comparisons?

20 THE WITNESS: Right. The -- the
21 figure here is based on Dr. Gray's
22 categorization, and it shows that had Dr. Gray
23 extrapolated -- so, again, the counts are by
24 program quarter-hour. And to each of those
25 programs, Dr. Gray has his categorization of

1 that program.

2 And so this is showing, had Dr. Gray
3 extrapolated and calculated shares directly
4 from the Nielsen data, what he would get
5 relative to what he gets based upon on that
6 same extrapolation but using now his imputed
7 values.

8 JUDGE BARNETT: Okay. His
9 categorization?

10 THE WITNESS: Correct.

11 JUDGE BARNETT: No comparison to the
12 categorization you did?

13 THE WITNESS: That's correct.

14 JUDGE BARNETT: Okay. Thank you.

15 JUDGE STRICKLER: I have another
16 question, just something I want clarified. I
17 think I get it from paragraph 65 of your
18 rebuttal report on page 23, explaining Figure
19 22 that you're looking at. We have the
20 percentage changes. Those are percentage point
21 changes rather than percentage changes; is that
22 correct? In other words --

23 THE WITNESS: These are percentage
24 point changes, that's correct.

25 JUDGE STRICKLER: Right. So, in other

1 words, if -- if one version had 22 percent for
2 Program Suppliers and another one had
3 33 percent for Program Suppliers, when you
4 corrected for his mistake, that would be an 11
5 percentage point -- and that's what you
6 reflect, the change, and that's what you're
7 reflecting here, that wouldn't be a 50 percent
8 change.

9 THE WITNESS: Correct, correct. It's
10 percentage point change.

11 JUDGE STRICKLER: Thank you.

12 BY MR. ERVIN:

13 Q. Let's look at your last point that we
14 mentioned, the concerns regarding the lack of
15 precision. And take a look at Dr. Gray's Table
16 C-5, which is in Exhibit 6036. This is on page
17 39 of Dr. Gray's direct testimony.

18 Dr. Gray indicates here that his
19 viewing share results have pretty tight
20 intervals and were quite precise. Is that an
21 accurate reading of Table C-5?

22 A. I would interpret confidence intervals
23 that are this narrow as precise.

24 Q. Confidence intervals, for example, in
25 2012 on the Program Suppliers of between 36.0

1 and 36.34, just as an example, pretty tight?

2 A. That's a very precise estimate.

3 Q. Okay. In your opinion, are these
4 calculations accurate?

5 A. They are not accurate.

6 Q. Why are Dr. Gray's calculations at the
7 95 percent confidence intervals in his
8 regression not accurate?

9 A. These calculations or Dr. Gray's
10 calculations of these confidence intervals
11 ignore several important sources of
12 uncertainty. First of all, these are
13 calculated assuming that Dr. Gray had used
14 simple random sampling of programs by
15 quarter-hour, when, in fact, Dr. Gray had
16 himself designed a sample which was stratified
17 cluster sampling.

18 Additionally, these calculations here
19 assume that the imputed values of distant
20 household viewing are -- are accurate and known
21 with certainty; in other words, that there's no
22 uncertainty about those values.

23 Q. Now, did you recalculate the precision
24 estimates here yourself?

25 A. I -- yes, I recalculated confidence

1 intervals, taking into account the sampling
2 design that Dr. Gray relied on.

3 Q. Let's take a look at Figure 23 in
4 Exhibit 2007, which is page 25 of your rebuttal
5 testimony.

6 And are these those recalculations
7 including the stratified cluster sampling
8 effects?

9 A. Yes. These calculations -- and,
10 again, here, it's similar to my prior
11 calculations for the program shares. These --
12 this table reproduces Dr. Gray's estimated
13 shares, and it also incorporates the margins of
14 error based on, you know, the standard errors
15 in precision estimates that come from informing
16 the statistical software of the correct
17 sampling design, which is stratified cluster
18 sampling.

19 Q. Okay. Let's take a look at Figure 24,
20 also the same page there in Exhibit 2007. And
21 is this an expression of those -- of the
22 confidence intervals providing the ranges based
23 upon your calculations?

24 A. Yes. These are the confidence
25 intervals that arise from taking Dr. Gray's

1 point estimates and adding and subtracting the
2 margin of error as calculated in Figure 23.

3 Q. Why don't we compare this, Figure 24,
4 to Dr. Gray's Table C-5, which is in
5 Exhibit 6036, and put them together. And let
6 me ask you to compare them if you would,
7 please.

8 A. So Figure 24 here, which takes account
9 of the use of stratified cluster sampling, so
10 taking account correctly of Dr. Gray's sampling
11 design, the confidence intervals are no longer
12 precise or as precise as Dr. Gray had in his
13 table.

14 For example, if we look at, you know,
15 Program Suppliers in 2012, you know, the range
16 is from 27.46 percent up to 44.82 percent. You
17 know, so this is a 17 percentage point swing as
18 opposed to the 36 percent to 36.34 percent
19 range that was reported by Dr. Gray.

20 Q. Now, the recalculation you did on the
21 margins of error in the confidence intervals
22 that you produced, that incorporated the
23 sampling design, right, the cluster, the
24 stratified cluster sampling; is that right?

25 A. That's correct.

1 Q. Do these wider confidence intervals in
2 Figure 24 account for the uncertainty you were
3 talking about before in the estimation of the
4 distant viewing that was done based upon the
5 Nielsen records?

6 A. No, these confidence intervals that I
7 calculated here do not incorporate the
8 additional uncertainty introduced by Dr. Gray's
9 imputation.

10 Q. And if you were able to do that, do
11 you believe that the confidence intervals in
12 Figure 24 would be even wider?

13 A. The statistical literature affirms
14 that the confidence intervals could only be
15 wider by introducing that additional source of
16 uncertainty.

17 Q. Okay. So let me try to apply the
18 three issues we just reviewed and that you just
19 provided some context for to what seemed to be
20 the two principal steps in Dr. Gray's direct
21 testimony in his study.

22 And the first one involves his
23 estimation of Claimant programs, Claimant
24 program minutes. And then the second one is
25 this distant viewing by Claimant imputations,

1 right?

2 So, first, would it be accurate -- do
3 you believe it's accurate to say that Dr. Gray
4 needs a sample that is representative by
5 station type in order to obtain unbiased
6 estimates of Claimant program and viewing
7 shares?

8 A. Yes, I do.

9 Q. And do you believe he accomplishes
10 that?

11 A. No, I do not.

12 Q. The second step, his imputation
13 method, right? In order to be reliable --
14 would you agree that, in order to be reliable,
15 his distant viewing share estimates, which are
16 in Table 2, which are based on his imputed
17 values in order to be reliable, there needs to
18 be a reliability in the underlying method?
19 Would you agree with that?

20 A. I would -- I would say that Dr. Gray's
21 econometric methodology for imputing distant
22 household records is unreliable.

23 Q. Based upon your review and your chance
24 to examine the materials as well as Dr. Gray's
25 study, do you have an opinion about whether

1 Dr. Gray's distant viewership study reliably
2 measures relative distant viewing -- distant
3 program viewership?

4 A. It is my opinion that Dr. Gray's study
5 of distant viewership produces biased,
6 imprecise, and unreliable results.

7 Q. Thank you, Dr. Bennett. We have no
8 further questions at this point.

9 JUDGE BARNETT: Mr. MacLean?

10 CROSS-EXAMINATION

11 BY MR. MacLEAN:

12 Q. Good afternoon, Dr. Bennett. I'm
13 Matthew MacLean and I represent the Settling
14 Devotional Claimants.

15 A. Good afternoon, Matt.

16 Q. So I want to clarify just a little
17 bit. Well, first, let me see if I can clarify
18 this: The Nielsen DMA ranking, if this
19 refreshes your recollection, is it done by
20 number of households in the -- television
21 households in the DMA? You don't remember?

22 A. I don't recall.

23 Q. Okay. No problem.

24 With regard to your categorization of
25 whether programming is compensable or not

1 compensable on WGN, or that is to say
2 compensable or non-compensable on WGNA, as I
3 understand it you took your FYI database; it
4 was just a side-by-side comparison. If it was
5 on WGN and WGNA at the same time, it's
6 compensable; if not, it's non-compensable. Is
7 that right?

8 A. If the program appeared on WGNA
9 simultaneously -- and simultaneously on WGNA,
10 that the program on WGNA would be flagged as
11 compensable.

12 Q. In your observation of the database,
13 were there times when the WGN database and the
14 WGNA database -- you know, maybe one was
15 showing as-~~aired~~, one was showing as-scheduled,
16 something -- anything like that? Or did you
17 not analyze that?

18 A. I'm not aware of one way or the other,
19 if that were the case.

20 Q. If it -- if it were the case that one
21 was showing as scheduled and then there was
22 something that caused a shift in as-~~aired~~ that
23 was reflected on the other one, would your --
24 would your categorization have correctly
25 captured whether it was compensable or not

1 compensable?

2 A. So my understanding from the FYI -- of
3 the FYI data is that it's updated to reflect,
4 you know, preemptions and other, you know,
5 changes to the schedule.

6 Q. Did you find any circumstance on WGNA
7 of non-compensable either sports or commercial
8 television programming?

9 A. I don't recall the -- I don't recall
10 all of the programs, you know, specifically by
11 whether they were compensable or not. The --
12 you know, the algorithm was designed and the
13 review was designed to look at overlapping or
14 simultaneous airing or not.

15 I didn't spend as much time studying,
16 you know, each instance and the type of
17 programming.

18 Q. Let me ask now, a different topic,
19 about your preparation of data and analyses for
20 Dr. Crawford's use. Okay?

21 Did you -- did you actually run the
22 regressions that Dr. Crawford would ask to be
23 run or did he run his own regressions?

24 A. Staff at Bates White that supported
25 both Dr. Crawford and I would run regressions.

1 In particular, Dr. Julian Chan, who is a Ph.D.
2 economist and also an econometrician by
3 training, was doing the heavy lifting on all
4 the econometric analysis in terms of the
5 computational implementation part.

6 Q. So Dr. Chan would be the one who would
7 run, if there was a regression run, it would be
8 Dr. Chan who ran it?

9 A. It would -- my understanding is that,
10 yes, if Dr. Crawford wanted a regression run,
11 that he would coordinate with Dr. Chan to do
12 that.

13 Q. Is it Chan or Chen?

14 A. Chan, C-h-a-n.

15 Q. Thank you. Was Dr. Chan working under
16 your supervision or was this sort of a --
17 separate from your supervision?

18 A. So Dr. Chan supported both
19 Dr. Crawford and myself, so with, you know,
20 portions of my analysis on categorization, et
21 cetera. Dr. Chan would also be someone that I
22 could turn to for help.

23 Q. Did you personally provide support for
24 Dr. Crawford's analyses?

25 A. Dr. Crawford and I, you know, did

1 speak at various times. I would characterize
2 my involvement there as acting as a sounding
3 board in some instances.

4 Q. I understand from your testimony just
5 now that a lot of your experience and expertise
6 has been in the area of bootstrapping. Is that
7 right?

8 A. Yes. I think maybe with the exception
9 of one of my research papers, all of my
10 research has involved to some degree the use of
11 bootstrap methods.

12 Q. Bootstrap methods are among the
13 methods that could be used to evaluate
14 over-fitting in a regression model; is that
15 right?

16 A. What do you mean by over-fitting in a
17 regression model? Do you have context in mind?

18 Q. Do you know what over-fitting means?

19 A. Well, it -- I do in certain contexts
20 understand what over-fitting is, but just to be
21 clear, the literature is quite broad in
22 statistics in general. So like many concepts
23 in statistics or econometrics, the -- there can
24 be variations on one's use of a term from --
25 you know, from one literature to the next.

1 As an example, just identification in
2 econometrics or statistics, there's papers
3 written on just what that term means for
4 different people in the field.

5 Q. To your knowledge, did Bates White run
6 any -- any tests on Dr. Crawford's regressions
7 for the purpose of determining whether or not
8 they were over-fitted in any definition of that
9 word?

10 A. I'm not aware of -- I'm not aware of a
11 test for over-fitting, no.

12 Q. To your knowledge, do you know how
13 many regression models were run by Bates White
14 at Dr. Crawford's requests before finalizing a
15 model that was presented in Dr. Crawford's
16 report?

17 A. I -- I don't know. I can say more
18 than one, but I don't know how many. And just
19 for context there, the -- the use of subscriber
20 group information was -- and the availability
21 of that information was something new, and I
22 know that, very early on in the case, there had
23 been a regression run not using subscriber
24 group information.

25 Q. So there was -- early on, before

1 finalizing a report, there was a regression run
2 that used system level information; is that
3 right?

4 A. Yeah, I believe that the -- at the
5 outset of the project, yeah, there would have
6 been a regression run, I think at the system
7 level.

8 Q. Okay. So that was -- you said that
9 you think it was more than -- there was more
10 than one. Was that one of the regressions that
11 were run before finalizing a regression model
12 that went into the report?

13 A. Yeah. So I would imagine that more
14 than one regression was run. You know, as I
15 described in my testimony, the process on my
16 side as the -- you know, the person responsible
17 for categorizing data, you know, and ensuring
18 that that's done appropriately, if I were to
19 make a correction of the data that would
20 necessitate rerunning a regression --

21 Q. I really meant more in terms of
22 different regression models. For example, at
23 the system level and at the subscriber group
24 level, it would be two different models. Would
25 you agree with me?

1 A. Yes.

2 Q. Yes. And besides -- aside from those
3 two models, were there other -- were there
4 other models run in which there were changes
5 made in the variables included or excluded? To
6 your knowledge?

7 A. Yeah, I imagine there were more
8 models.

9 Q. Don't imagine. I'm not asking you to
10 imagine.

11 A. Okay.

12 Q. I can imagine it but --

13 (Laughter.)

14 BY MR. MacLEAN:

15 Q. If you could just stick to what you
16 know.

17 A. I -- I don't know how many regressions
18 were run or not. I think that would be, you
19 know, a question for Dr. Crawford. As I
20 described earlier, you know, the process was,
21 you know, I am -- I'm the data guy. If you
22 have a question about the data and the
23 understanding of a variable, I can help with
24 that.

25 Dr. Chan was, you know, running a

1 regression at the request of Dr. Crawford.

2 Q. Would you be copied on e-mails between
3 Dr. Chan and Dr. Crawford about regressions?

4 A. In some cases, yes.

5 Q. Including e-mails that included
6 regression results?

7 A. In some cases, yes.

8 Q. Do you still have those e-mails?

9 A. I don't know one way or the other.

10 Q. Do you typically delete your e-mails
11 from time to time?

12 A. I'm not very good at deleting my
13 e-mails.

14 MR. MacLEAN: No further questions.
15 Thank you. Thank you, sir.

16 THE WITNESS: Thanks.

17 JUDGE BARNETT: Cross-examination?
18 How much do you have, Mr. Olaniran? How much,
19 how long do you anticipate?

20 MR. OLANIRAN: Half hour, it depends.
21 Half an hour?

22 JUDGE BARNETT: Let's take our
23 afternoon recess, please, 15 minutes.

24 (A recess was taken at 2:46 p.m.,
25 after which the trial resumed at 3:06 p.m.)

1 JUDGE BARNETT: Please be seated. Mr.
2 Olaniran?

3 MR. OLANIRAN: Thank you, Your Honor.

4 CROSS-EXAMINATION

5 BY MR. OLANIRAN:

6 Q. Good afternoon, Dr. Bennett. My name
7 is Greg Olaniran, and I represent Program
8 Suppliers.

9 A. Good afternoon, Greg.

10 Q. And I just have a few questions for
11 you.

12 With regard to your program
13 categorization, you used an algorithm to assign
14 programs to categories used in this proceeding,
15 correct?

16 A. I used an algorithm as outlined in
17 Appendix D of my written testimony.

18 Q. And your algorithm applied to the
19 entire database of U.S., Canadian, and Mexican
20 broadcast channels based on data that was
21 provided by FYI, correct?

22 A. I believe the algorithm categorized
23 all of the broad -- all of the programming on
24 the broadcast stations in the -- in the
25 database.

1 Q. Can you just speak up a tiny bit,
2 please.

3 A. I believe that the algorithm and the
4 categorization applied to all of the airings
5 data for broadcast stations.

6 Q. Thank you. And you are familiar with
7 Dr. Gray's categorization also, are you not?

8 A. I'm familiar with Dr. Gray's
9 categorization to -- to the extent that I
10 examined it for discrepancies and
11 miscategorizations.

12 Q. Are you familiar -- did you look at
13 his algorithms for program categorization?

14 A. I did, yes.

15 Q. Okay. But his algorithm was applied
16 to samples of stations based on data provided
17 by Gracenote, correct?

18 A. Dr. Gray relied on Gracenote data in
19 his analysis and in his categorization, that is
20 correct.

21 Q. And did you review Dr. Gray's rebuttal
22 testimony? It should be Exhibit 6037. It
23 should be -- is it there?

24 A. Can I get a copy of it just to
25 confirm?

1 Q. Do you see a green binder next to you,
2 on the floor?

3 A. You said a green binder?

4 Q. Yes.

5 A. Or a green cover?

6 Q. A black binder with a green cover.

7 A. There, there we go. Oh, it's heavy.

8 JUDGE BARNETT: Welcome to our world.

9 (Laughter.)

10 THE WITNESS: Okay.

11 BY MR. OLANIRAN:

12 Q. Let's go to Exhibit 60 -- actually, it
13 should be on your screen, if that's better for
14 you to handle.

15 A. That's better, yeah.

16 Q. And have you seen that table before?
17 It is Table 9 on page 21.

18 A. Just give me one second. Distant
19 viewing shares, yes, I do recall seeing this
20 table, yes.

21 Q. And do you understand what Dr. Gray is
22 presenting in Table 9?

23 A. Yes, I believe I understand what Dr.
24 Gray is presenting in this table.

25 Q. And do you agree the third column is



1 original classification of viewing shares based
2 on his algorithm for program categorization; do
3 you understand that to be the case?

4 A. That's my understanding, yes.

5 Q. And then in the last -- in the -- on
6 the last column, he is doing the same thing,
7 except this time he is using an algorithm. Do
8 you see that?

9 A. I -- yes, I see that he's using -- I
10 see the numbers that are presented. I did
11 review this analysis.

12 And what Doctor -- the shares that Dr.
13 Gray are presenting here are based on my
14 original categorization prior to the
15 corrections that were -- that I completed and
16 submitted as part of my amended testimony.

17 Q. Which --

18 A. To be clear --

19 Q. Which data? I mean, which date
20 amended testimony?

21 A. I believe that would have been in
22 April 2017.

23 Q. Okay.

24 A. So these don't --

25 JUDGE STRICKLER: And that's amended



1 rebuttal testimony?

2 THE WITNESS: My amended direct. So
3 these share calculations do not include the
4 recategorizations that were made as part of the
5 correction to my categorizations. So neither
6 patch A nor patch B are reflected in these
7 shares.

8 BY MR. OLANIRAN:

9 Q. Excuse me one second. Now, let's go
10 to Exhibit -- to your rebuttal testimony, the
11 one that was filed on September 15th. That's
12 Exhibit 2007.

13 And let's start with Section VI.A, the
14 discussion from Section -- from page 18
15 floating over to page 19.

16 Just a couple of questions. This is a
17 follow-up to the exchange that you had with Mr.
18 MacLean a few minutes ago.

19 You didn't run any of the regressions
20 requested by Dr. Crawford, did you?

21 A. So I'm not sure that that is a correct
22 characterization of what I said earlier. So
23 Dr. Chan is supporting both Dr. Crawford and
24 myself. Dr. Chan is the one who Dr. Crawford
25 would rely on to -- to run the regressions.

1 Q. So the answer to my question is, no,
2 you did not?

3 A. Can you repeat the question?

4 Q. My question -- I promise it is not a
5 trick question -- my question was whether or
6 not you ran any of the regressions requested by
7 Dr. Crawford?

8 A. No.

9 Q. And you referred to yourself as the
10 data guy. Does that mean that you didn't run
11 any regressions, you didn't run any regressions
12 at all?

13 A. No, I ran regressions. The analysis
14 that was done by Dr. Gray and the analysis of
15 his underlying materials, I took that upon
16 myself to do that analysis. So I -- I reran
17 Dr. Gray's regression.

18 Q. You replicated his regression?

19 A. I replicated -- I reran his code on
20 the data that he provided, yes.

21 Q. So does that mean that you have
22 replicated his coefficients?

23 A. The only reason I'm hesitating is I
24 don't recall if there was any replication
25 issue. So, to the best of my knowledge, I was

1 able to replicate, I think it was all except
2 for one set of coefficients for one year
3 exactly.

4 Q. Were you able to replicate his results
5 for the most part?

6 A. For the most part, yes.

7 Q. And how often do you work with
8 regression analysis?

9 A. More often than I would like.

10 Q. How often is that?

11 A. So in my role at Bates White, a lot of
12 what I do is oversee and review, you know,
13 analyses done by other, you know, junior
14 consultants. That often involves me, you know,
15 running regressions.

16 You know, if I don't have -- just to
17 be clear, if I don't have a Dr. Chan running my
18 regression, then likely it is going to be me
19 doing something like that on another case.

20 Q. So how often would you say? Once a
21 week, you know, once a month?

22 A. It's -- so I would put it this way:
23 It is not every day, but some days it is all
24 day. And I haven't taken it upon myself to
25 think carefully about how to quantify that.

1 Q. Okay. And have you ever worked with
2 Nielsen viewing data at all before this
3 proceeding?

4 A. Prior to this case I don't recall
5 doing any detailed analysis directly, analyses
6 directly with Nielsen data, other than seeing
7 summaries and charts and things like that.

8 Q. Okay. So do you have any idea what
9 portion of all viewing is distant viewing?

10 A. In terms of counts of households, or
11 --

12 Q. Yes.

13 A. I -- I do not know. No, I haven't
14 taken it upon myself to do any analysis of, you
15 know, household counts of viewership outside of
16 what I have seen in this matter here.

17 Q. Okay. What about in terms of
18 quarter-hours, do you know what portion of all
19 program quarter-hours is distant quarter-hours?

20 A. I have not done an independent
21 assessment of that, nor do I recall what those
22 figures are.

23 Q. Now, as I started to ask you a couple
24 of questions about Section VI.A, that is pages
25 18 and 19, and so let me get to that.

1 Just a quick question. On figure 17
2 on page 19, are you there?

3 A. Yes.

4 Q. Okay. What metric is that? Is it
5 quarter-hours, number of programs, or --

6 A. These are counts of quarter-hour
7 records in Dr. Gray's regression database.

8 Q. And in paragraph 53, and you talk
9 about the fact that Dr. Gray tops his
10 regression data by replacing missing distant
11 and local viewing records with zeros, right?

12 A. I do discuss that, yes.

13 Q. So the first point is that -- your
14 point is that there is a bunch of zeros in the
15 records that Dr. Gray obtained from Nielsen --
16 or, actually, let me -- let me strike that and
17 go back.

18 Your premise is that there is a lot --
19 there is missing data from the data that
20 Nielsen and Dr. Gray received from Nielsen; is
21 that correct?

22 A. The fact, these are -- so in figure
23 17, these are just actual counts of whether
24 they are missing or not, you know, for -- so we
25 can read from the table directly how many

1 records, quarter-hour records in Dr. Gray's
2 database were without any Nielsen distant
3 viewing record.

4 Q. Okay. I just wanted to make sure I
5 understand what you mean by missing. By
6 missing, are you -- are you saying that the
7 record is somewhere and it has not been
8 presented or that there is no recorded viewing?

9 A. So what I mean by that is that if your
10 -- you know, so where it is marked as missing
11 here, there is no -- so when there is a record
12 in, let's say, at, you know, 2:00 o'clock on
13 Thursday on a particular date in a particular
14 quarter-hour, if there is that time and that
15 quarter-hour and a household record and number,
16 that would be a, you know, a non-missing.

17 If I look and it says, you know, 3:00
18 p.m., 3:15, and then it goes to 4:00 o'clock,
19 and there is nothing there, that's missing.

20 Q. Okay. Again, my question is when you
21 say missing, are you saying that the record
22 exists and it has not been presented or are you
23 saying there is no recorded viewing? Do you
24 understand the difference?

25 A. I understand my interpretation of

1 missing to mean that if I go down the list and
2 there is nothing there, that that's missing,
3 and then there is something.

4 Q. I understand what you are saying. My
5 question is, are you making a distinction
6 between a record that exists that is not being
7 presented versus a quarter-hour where there
8 just simply was no recorded viewing?

9 A. I don't know whether that record
10 exists anywhere. If I understand -- maybe you
11 can restate your question.

12 Q. My question is whether or not -- what
13 would you expect to see, if in a quarter-hour
14 there was no recorded viewing, let's say nobody
15 watched, what would you have expected to see in
16 that quarter-hour?

17 A. I would expect that if there was zero
18 viewing, that there would be a zero recorded.

19 Q. Okay. This is from your familiarity
20 with Nielsen data or is this just your general
21 impression? I'm sorry, strike that.

22 Is this from your familiarity with --
23 well, what is your basis for that, for that
24 understanding?

25 A. For my understanding that if it were

1 truly zero, that they should -- that I would
2 expect to see a zero?

3 Q. And what is the basis for that, for
4 that statement?

5 A. That would be -- I don't have -- so it
6 would -- it would be my understanding that if
7 there is truly a zero, I would expect to see a
8 zero.

9 I'm not making -- just to be clear,
10 I'm not relying on this data for any analyses.

11 And to the extent it is missing, I'm
12 not imputing a zero or not. But I would, you
13 know, that would be my expectation with data is
14 that when there are zeros and a known number,
15 that they get entered.

16 Q. But you haven't had any interaction
17 with Nielsen data in this kind of detail prior
18 to this proceeding?

19 A. No, I have not.

20 Q. And so you wouldn't know, for example,
21 if no information in a particular quarter-hour
22 means no viewing?

23 A. Well, what I do know is that it is not
24 zero and not zero as was done in this analysis
25 here.

1 Q. So your answer to my question is, no,
2 you would not know, correct?

3 A. I don't know what the true value is,
4 but it can't be two different values at the
5 same time. That's -- that's what I know about
6 the data.

7 Q. Well, what do you mean by it can't be
8 two different values?

9 A. Well, if I were to impute zero as a
10 value to rely on in a regression, and then I
11 replaced the zero with a different non-zero
12 value, I have implicitly assumed that there are
13 two different values for that record that are
14 both correct, which just can't be right.

15 Q. I am trying to determine if I really
16 understand your answer or not. And I am trying
17 to make this question as simple as possible.
18 So bear with me.

19 You have never worked with Nielsen
20 data in this manner before, in this detail
21 before, correct?

22 A. That's correct, I haven't worked with
23 this Nielsen data before.

24 Q. So if -- if the quarter-hours with no
25 information, if Dr. Gray received the

1 quarter-hours with no information in inserting
2 quarter-hours in those -- with no information
3 in those quarter-hours, you are interpreting
4 that -- those -- the lack of information as
5 missing data, correct?

6 A. Can you repeat that one more time?

7 Q. If Dr. Gray received data from Nielsen
8 in quarter-hour format and there are
9 quarter-hours with no information, it doesn't
10 say zero, there is no value in it, just empty,
11 right, are you interpreting that data as
12 missing, or are you interpreting it as no -- no
13 viewing?

14 A. I am interpreting that to me as
15 missing in the sense that I don't know what the
16 correct value should be.

17 Q. Okay. What would you have expected to
18 see if there was, in fact, no viewing in that
19 -- in a particular quarter-hour? What would
20 you have expected to see?

21 A. I think what I would expect is, for me
22 personally if I were to do this analysis, and
23 if there is zero viewing that is reported to
24 me, that I would interpret that as a zero.

25 Q. Okay.

1 A. Otherwise it is not clear to me how to
2 interpret that. That's -- that's what's being
3 conveyed in this table. If it is missing, I as
4 the analyst am unsure as to what the correct
5 value is. It could be zero. It could be a
6 number other than zero.

7 Until I have confirmation of that, it
8 is a missing record.

9 Q. Okay. Do you know whether or not Dr.
10 Gray had confirmation before he, as you said,
11 replaced those cells with zeros?

12 A. If -- if Dr. Gray had confirmation
13 that it was zero, there is no basis for him to
14 then run a regression and estimate a new value
15 which is positive and greater than zero, and
16 then put it in.

17 Q. Okay. Now, is it fair to say that you
18 are troubled by the extent of the zeros in the
19 records that were provided by Nielsen?

20 A. No, I don't think that's a fair
21 statement.

22 Q. Well, what is your -- what is your
23 characterization of the extent to which the
24 record provided by Nielsen contained a lot of
25 zeros?

1 A. So to be clear, what I have assessed
2 here is the count of records or the count for
3 which there was no numeric value provided from
4 Nielsen. I don't know if they are zero or not,
5 and I haven't characterized them as, 'you know,
6 the extent of zeros.

7 Q. Well, you, and going back to page 18,
8 paragraph 49, you said -- in figure 16, you
9 have a percentage, a percent with no distant
10 viewing record. Do you see that?

11 A. Yes, I do.

12 Q. And you listed different percentages
13 ranging from 93 to about 95.

14 If we assume that that percentage --
15 those percentages were actually zeros, would
16 that -- would that trouble you as a data
17 analyst?

18 A. I wouldn't feel one way or the other.
19 I wouldn't be troubled by having data available
20 from which to analyze.

21 Q. So you don't -- the issue for you is
22 not the fact that there is zero -- that there
23 were no -- there is no information in the
24 quarter-hours; your criticism is that Dr. Gray
25 replaced those empty quarter-hours with zeros,

1 is that fair?

2 A. No, that's not quite right.

3 Q. Okay. Well, tell me what your issue
4 is there.

5 A. So the issue, as I have laid out in
6 paragraph 50, is that Dr. Gray first replaces
7 more than 93 percent of missing records with
8 zeros, then puts those zeros into a regression
9 thereby estimating a relationship between zero
10 viewing and -- distant viewing and whatever
11 record he had for local viewing.

12 And then out of that regression,
13 estimating positive viewing and then replacing
14 all of the zeros with positive numbers.

15 Q. Okay.

16 A. So to be clear, you are going from an
17 assumption that it is zero into a model which
18 then says that it is not zero, and then relying
19 on the not zero value.

20 Q. Do you --

21 A. But what is the basis for estimating a
22 relationship on a number that, you know, for
23 myself, if I was to estimate a relationship
24 based on data that I don't believe to be
25 correct or accurate, that just lacks, I mean,

1 scientific rigor.

2 Q. Now, what if you -- let's assume that
3 those, those zeros were actually non-recorded
4 viewing. Would that change your opinion about
5 his analysis?

6 A. The --

7 Q. In this particular context.

8 A. Right. So what that would tell me is
9 that the regression serves no purpose. If I
10 have data from Nielsen that's non-zero, and
11 that every missing record is a zero, there is
12 no need for a regression. I know the values of
13 every record. I performed my analysis based on
14 that data.

15 And as my analysis -- my testimony, my
16 written testimony shows, we know the impact and
17 the shares based on that analysis.

18 Q. So you don't think that if -- is it
19 the level of non-recorded -- in my assumption,
20 is it the level of non-recorded viewing or
21 percentage that is, your criticism because you
22 say if you have that much non-recorded viewing,
23 that you don't believe there should be a
24 regression. Is that a fair -- a fair
25 statement?

1 A. If they are known values, you don't
2 need to impute them. There is no -- there is
3 no -- if I -- if Nielsen provided all of the
4 records to Dr. Gray and those records were
5 accurate and reliable, Dr. Gray could have just
6 calculated the shares without resorting to this
7 regression-based imputation procedure.

8 Q. What is your understanding of what Dr.
9 Gray did in his regression model?

10 A. As I described a few minutes ago, Dr.
11 Gray started with the regression data set,
12 which is summarized in my testimony on -- in
13 figure 17.

14 For -- in instances where he did not
15 have a distant viewing record from Nielsen, Dr.
16 Gray replaced those with zero values. Okay?

17 Now, with that data which is, you
18 know, zeros and positive records, he then put
19 that data into a regression, which then forms
20 the basis for estimating the relationship
21 between local viewing, again, when observed,
22 and distant viewing, which is the zeros that he
23 put in in the remaining, you know, the other 7
24 or so odd percent of actual records.

25 So the basis for establishing the

1 relationship in the regression is the zeros and
2 then the other 7 percent, roughly, of Nielsen
3 actual records.

4 Q. Do you understand the objective of the
5 exercise overall?

6 A. Yes, I do.

7 Q. What is it?

8 A. The exercise was -- can I get his
9 report? I think he -- he summarizes it quite
10 succinctly.

11 Q. That will be 6036, Exhibit 6036. Can
12 you --

13 MR. ERVIN: The green binder.

14 THE WITNESS: Oh, the green binder.

15 BY MR. OLANIRAN:

16 Q. I'm sorry. I was actually trying to
17 get it up on the screen.

18 A. So which --

19 Q. 6036.

20 A. 6036. Yeah, so paragraph 35 on page
21 17, Dr. Gray writes that "due to the low
22 frequency of distant viewing and the size of
23 the sample Nielsen uses to measure total U.S.
24 household viewing, there are many instances of
25 no recorded distant viewing of compensable

1 retransmitted programs in the Nielsen household
2 meter data. However, it is possible to obtain
3 reliable estimates of distant viewing for all
4 retransmitted programs by also relying on
5 Nielsen measures of household viewing in each
6 retransmitted station's local market."

7 This is the paragraph in which
8 Dr. Gray sets out the rationale for his
9 regression analysis.

10 Q. And is it safe to say that the purpose
11 of the regression analysis was to predict
12 viewing for all of the programs in the sample,
13 correct?

14 A. Yes, but if you are missing those
15 records, you set -- if you set them to zero and
16 then you use that already-imputed value, which
17 you don't believe to be correct within your
18 regression, you bias your regression, the
19 estimates coming out of the regression are
20 unreliable, and the imputed non-zero values are
21 also unreliable.

22 Q. I mean, if you had all the record, you
23 wouldn't need a regression in the first place,
24 right?

25 A. Exactly.

1 Q. You wouldn't have anything to predict
2 if you had all the records?

3 A. You wouldn't need to.

4 Q. Okay. And the regression only comes
5 in when you need to predict information that's
6 not readily available or apparent, correct?

7 A. Exactly.

8 Q. You also talked about the fact that
9 Dr. Gray did not -- did not use the actual
10 viewing. And if I recall correctly, your
11 criticism was that he did not replace the
12 values that he calculated with the actual
13 viewing data that came from Nielsen.

14 Is that a fair way to describe the
15 criticism?

16 A. So I would characterize the exercise
17 slightly differently. Dr. Gray sets out to
18 impute the records for which he has no distant
19 -- to impute values where he has no distant
20 viewing records. For approximately 7 percent
21 of the quarter-hours in each year Dr. Gray had
22 available to him actual viewing records.

23 And so his exercise then is, you know,
24 according to him, to impute records for the
25 missing.

1 Now, what Dr. Gray does, in fact, is
2 he takes from his regression the output,
3 replaces the zeros with that output, but he
4 then also replaces the actual values in the
5 Nielsen data with the estimates coming out from
6 that model.

7 Q. So, in your view, what Dr. Gray should
8 have done was, after he predicted viewing for
9 all quarter-hours, he should have gone back and
10 taken out the predicted viewing and replaced
11 those predicted viewing with actual viewing
12 where he had actual viewing?

13 A. That's not what I'm saying.

14 Q. What are you saying?

15 A. My opinion is that -- only that
16 Dr. Gray -- what Dr. Gray has done is
17 unreliable. I have not offered an opinion
18 about how Dr. Gray could have or should have
19 done this exercise.

20 My opinion is limited to the fact that
21 there is no basis for imputing values where he,
22 himself, says they are missing, doesn't believe
23 they are zero, imputing them with a zero,
24 basing a regression analysis on that data which
25 he does not believe to be correct, and then

1 replacing it with the values coming out of this
2 regression analysis that's based on those
3 incorrect values.

4 Q. But your words in your testimony is
5 that he supplanted the actual viewing, right,
6 that's what you said, is that right?

7 A. I did -- I did in my testimony write
8 that he supplanted the actual viewing, yes. He
9 replaced -- he replaced the values that were
10 actually provided to him with those coming out
11 of his econometric model.

12 Q. I don't think I'm disputing your
13 description of what he did. My -- my question
14 to you is, you were criticizing him for not --
15 for what you describe as supplanting the actual
16 viewing.

17 And my question simply is, what would
18 have been the correct way to do it in that
19 particular context? What would have been the
20 correct way, in your view, of what he should
21 have done with the actual viewing?

22 A. I'm not endorsing the data that he
23 relied on.

24 Q. I am not asking you about that. I am
25 asking you about his methodological approach.

1 He used actual viewing to predict, among other
2 variables, to predict entire viewing for all of
3 the sample stations, and did not go back to
4 replace those quarter-hours that have actual
5 viewing. And your criticism is that he should
6 not have done that.

7 My question to you is, what's the
8 alternative? What in your view was the correct
9 approach methodologically, setting aside your
10 -- your disagreement with data in general, what
11 should have been the correct methodological
12 approach to what Dr. Gray did, in your view?

13 A. I have not -- I was not asked to
14 develop a statistically-sound methodology for
15 the purpose of calculating distant viewership.
16 But as a starting point I think I would first
17 go back to Nielsen and get clarification about
18 the missing records.

19 Q. Do you know whether or not Dr. Gray
20 did that?

21 A. I only know what's in Dr. Gray's
22 testimony and what I have stated about the --
23 the unreliable nature of -- of this analysis.

24 Q. Did you read the testimony of Mr.
25 Lindstrom?

1 A. I did review his testimony at the time
2 I was doing this analysis.

3 Q. And do you recall Dr. -- I mean, Mr.
4 Lindstrom's testimony with regard to zero
5 values?

6 A. I'm happy to take a look at it.

7 (Pause)

8 MS. PLOVNICK: May I approach the
9 witness?

10 JUDGE BARNETT: You may.

11 MS. PLOVNICK: It is Exhibit 6017.

12 JUDGE STRICKLER: Which exhibit
13 number, counsel?

14 MS. PLOVNICK: 6017.

15 JUDGE STRICKLER: Thank you.

16 BY MR. OLANIRAN:

17 Q. Do you have a copy in front of you?

18 A. Yes, I do.

19 Q. Of Mr. Lindstrom's testimony?

20 A. Yes, I do.

21 Q. Now, let's go to page 5. Look at the
22 first -- well, that paragraph Roman numeral V.

23 And let me just read that quickly so
24 that we can move on. Mr. Lindstrom says in his
25 testimony that: "One concern raised in past

1 Phase II proceedings, and which may be raised
2 also in the allocation phase of this
3 proceeding, is the so-called zero viewing
4 instances that appear in Nielsen's custom
5 analysis of national household metered viewing
6 data. The appearance of these zero viewing
7 instances is consistent with what I would
8 expect to find in a custom analysis of viewing
9 to distant signals by cable subscribers, for at
10 least two reasons.

11 "First, it is important to recognize
12 that Nielsen's custom analysis excluded all
13 distant viewing to programs that are not
14 compensable in this proceeding. And this
15 included distant viewing to ABC, CBS, and NBC
16 network programs that were not simultaneously
17 broadcast on WGN's local feed and WGN's
18 satellite feed known as WGNA. Where
19 non-compensable programs aired, Nielsen's
20 custom analyses properly reported a zero
21 viewing value.

22 "Second, the amount of actual viewing
23 minutes to certain distant signals is very
24 small. Where the viewing minutes to particular
25 distant signal programs were so small as to be

1 statistically insignificant, Nielsen's custom
2 analysis would assign a zero viewing value."

3 Now, does that explain any of the
4 missing data issues that we just discussed?

5 MR. GARRETT: Your Honor, may I just
6 have a clarification here?

7 JUDGE BARNETT: Yes.

8 MR. GARRETT: In the language that Mr.
9 Olaniran read here, there is a reference to the
10 removal of the ABC, NBC, CBS programming. We
11 specifically asked about that statement during
12 the discovery process to get further
13 clarification.

14 And the Program Suppliers told us that
15 that particular sentence was included by error,
16 that this was actually just sort of a cut and
17 paste from some earlier testimony of Mr.
18 Lindstrom.

19 And I, frankly, hadn't noticed that
20 whatever they uploaded here and have admitted,
21 that they still have this language in here.
22 But I believe it was in error and so stated in
23 a letter dated April 12th, 2017 to us.

24 MR. OLANIRAN: I think Mr. Garrett is
25 correct, that with regard to that reference,

1 the sentence that starts with "this included"
2 and ends with "WGNA."

3 JUDGE BARNETT: Thank you. Mr.
4 Bennett, did you follow? Just pretend that
5 sentence is not there.

6 THE WITNESS: Okay.

7 JUDGE STRICKLER: Does that make
8 second, in that quote on page 5, the only
9 rationale for what we're calling the zero
10 viewing?

11 MR. OLANIRAN: That would be -- that
12 would be correct, yeah.

13 JUDGE STRICKLER: Okay.

14 MR. OLANIRAN: Well --

15 JUDGE BARNETT: Mr. Bennett, we have
16 heard this testimony before in other contexts.

17 What we have heard from Dr. Gray is,
18 for instance, if you do a sample of 100 people
19 in Manhattan and your objective is to determine
20 the relative value of different colors of jelly
21 beans based upon consumption, and your sample
22 is so small that you don't run across anybody
23 who says green, but you still know that
24 somewhere in Manhattan there are people eating
25 green jelly beans because they are still being

1 sold.

2 So what he has done is take a small
3 sample, aggregate it up to come up with a
4 number.

5 Now, I might be misstating Dr. Gray's
6 testimony.

7 JUDGE STRICKLER: I think, I think he
8 did a jelly bean sample, if I am remembering it
9 correctly, but he also, with regard to people
10 in New York City, for example, he wanted to
11 sample for the people who were left-handed.

12 And he said he would look at 100
13 people and, if he got none of them were
14 left-handed, he wouldn't assume from that
15 result that there were no left-handed people in
16 New York.

17 So he would use the -- he would -- he
18 would project a certain amount based on the
19 sampling that he did, where he did have in some
20 other sample local viewing, to mix metaphors,
21 if you will, and say, no, there have to be some
22 and I am going to use the data I have from this
23 other sample to let me know how many
24 left-handed people there are in New York. I
25 think that's the same concept.

1 JUDGE BARNETT: Right. So my question
2 is, is it not a valid approach to take some
3 data you know, for instance, local viewing, and
4 develop a relationship to data you don't know,
5 such as distant viewing, when the categories
6 are the same, and you know that zeros are not
7 really zero.

8 And for one reason Nielsen says they
9 are just too few to count, so they don't put
10 anything in there. And for another, just
11 because the meters say zero doesn't mean nobody
12 in the country is watching that. Okay.

13 So that's really where the crux of it
14 is. And we have in the distribution phase had
15 to deal with this zero viewing many times. So
16 I would be interested to know what you have to
17 say on that.

18 THE WITNESS: Sure. So in principle
19 when you -- so if we step back here, the
20 relationship that's of interest, or purportedly
21 of interest here, is between local viewing and
22 distant viewing, presumably because if I have
23 reliable local viewing, let's say in the entire
24 population, even if I don't have distant
25 viewing, as long as I understand the

1 relationship, I can plug in local and I can get
2 distant. Okay?

3 The fundamental issue with the
4 regression that's been done by Dr. Gray is he
5 is not just looking at when he has a distant
6 record and a local record to establish that
7 relationship. He extends outside of what he
8 knows. And these are the situations where he
9 has, you know, all of these zero records.

10 Remember, the objective, according to
11 Dr. Gray, is to understand what the true value
12 of the zeros are. So if you are trying to
13 ascertain the true relationship between distant
14 viewing and local within a modeling framework,
15 you should only include instances where you
16 know both the distant and local. That's what
17 allows you to understand the relationship
18 between these types of variables.

19 Once you extend outside of that and
20 you say, well, these are the instances, you
21 know, in his testimony it is like 93 percent of
22 the records, those are the ones he wants to
23 fill in. Those are the ones he wants to
24 estimate.

25 But rather than excluding them from

1 the model, he puts zeros in for all of those
2 distant viewing records and then says, now
3 let's take a look at what the relationship is
4 between local and distant.

5 It's local zero, local zero. That's
6 going to distort the true relationship because
7 he is now in the econometric setting trying to
8 -- he is passing that to the statistical
9 procedure and saying, tell me what the
10 relationship is.

11 I think an analogy would be something
12 like if I -- if I had data on height and weight
13 and there is a relationship between these two,
14 I want to know on average people of certain
15 heights, how much do they weigh. Okay?

16 And I have data, let's say, for
17 everyone in this room. I know their heights.
18 I don't know everyone's weight. I know half of
19 their weights. Okay?

20 So I could take that half and I could
21 say: Well, what is the relationship between
22 height and weight? And then I would extend out
23 to the rest of the people for which I only know
24 their height but not their weight.

25 In this context what's being done here

1 by Dr. Gray is he is saying: For every person
2 whose weight I don't know, I'm going to set it
3 to zero, and now I'm going to go and analyze
4 what is the relationship between height and
5 weight.

6 Well, now it is completely distorted.
7 I have got a whole bunch of people who are --
8 have height but don't weigh anything at all.
9 And that relationship is just completely then
10 biased and distorted and should not be relied
11 on to predict outside of what you know.

12 JUDGE BARNETT: Thank you.

13 JUDGE STRICKLER: Let me ask you,
14 building on that, going back to page 5 of Mr.
15 Lindstrom's testimony, where it says the word
16 second, which is now the only rationale for the
17 zero, do you see where I am?

18 THE WITNESS: Yes.

19 JUDGE STRICKLER: I'm quoting now:
20 "The amount of actual viewing minutes to
21 certain distant signals is very small. When
22 the viewing minutes to particular distant
23 signal programs was so small, it has to be
24 statistically insignificant, Nielsen's customer
25 analysis would assign a zero viewing value."

1 That at least suggests to me that what
2 he is saying is we have a bad sample so we just
3 do something else. Am I reading that wrong?

4 In other words, there is so many zeros
5 that it's not a good sample to use, so we're
6 just going to add -- we're just going to change
7 the zeros to something, based on the few data
8 points that we do have. Is that what it says?

9 THE WITNESS: I might need some
10 clarification. So this is Mr. Lindstrom's
11 testimony here?

12 JUDGE STRICKLER: Right.

13 THE WITNESS: He is not -- he is not,
14 I think -- or he is disconnected from the whole
15 imputation analysis. And what I understand Mr.
16 Lindstrom to be saying is that, you know, where
17 they couldn't -- where Nielsen could not
18 reliably tell you how many distant viewers
19 there are, so when it is so small so as to be
20 statistically insignificant, so you could have,
21 you know, a household count of two, but you
22 have uncertainty with respect to your estimate,
23 so they essentially are building, like, you
24 know, they have a confidence interval for that.

25 They are saying, you know, there is

1 some error, some noise in this process, but
2 we're not going to attach a value to it unless
3 we have sufficient confidence in it.

4 That's what I -- that's what my
5 interpretation would be from -- from that
6 sentence.

7 JUDGE STRICKLER: Thank you.

8 BY MR. OLANIRAN:

9 Q. And so in your view, you didn't
10 understand Dr. Gray's analysis to be predicting
11 -- to be attempting to predict viewing in every
12 quarter-hour of every single program; you only
13 interpreted it as trying to predict viewing
14 only to the zero cells, if you will?

15 A. Dr. Gray -- so if we go back to the
16 height/weight analogy I gave a minute ago --

17 Q. No, actually let's stick with what you
18 think Dr. Gray was trying to do.

19 A. I can tell you what he did. And that
20 is he predicted values out of this biased
21 regression. Right? The data he put into it
22 was not an accurate depiction of the actual
23 data, even according to him.

24 The predictions that are coming out
25 are all -- he predicts distant viewing for

1 every single quarter-hour --

2 Q. Correct.

3 A. -- in his regression data. He
4 predicts that. Then what --

5 Q. Then -- I'm sorry.

6 A. Then what you do with that is another
7 question. The regression model will always --
8 can always produce a prediction.

9 Q. Was the -- was viewing data the only
10 variable in his regression analysis?

11 A. No, it was not.

12 Q. What else was in it?

13 A. He had dummy variables for
14 quarter-hour. He also included I think what he
15 called local ratings. Oh, and he also used a
16 program, program categories from the Encore --
17 excuse me, the Tribune, the TMS data.

18 I could be missing something. I have
19 to go back and look at his testimony to see all
20 of the co-variates.

21 MR. OLANIRAN: I have no further
22 questions, Your Honor. Thank you.

23 JUDGE BARNETT: Thank you, Mr.
24 Olaniran.

25 Mr. Dove or Mr. Cho, which one?

1 MR. DOVE: Mr. Dove.

2 JUDGE BARNETT: Okay. Mr. Dove.

3 CROSS-EXAMINATION

4 BY MR. DOVE:

5 Q. Good afternoon, Dr. Bennett. My name
6 is Ron Dove and I represent the Public
7 Television Claimants.

8 A. Good afternoon, Ron.

9 Q. If we can turn to figure 4 of your
10 direct testimony, Exhibit 2006, and this figure
11 is entitled Total Minutes Airing on Distant
12 Signals By Year, in the Millions.

13 And I just direct your attention,
14 Dr. Bennett, to the column for PTV, for Public
15 Television. Would you agree that Public
16 Television is the second largest category when
17 it comes to minutes of distant signal
18 programming?

19 A. I would agree that's what the table
20 says based on, so just to be clear, total
21 minutes airing on a distant signal, yes, that's
22 right.

23 Q. And would you agree that Public
24 Television has more distant signal minutes than
25 Joint Sports, Commercial Television,

1 Devotional, and Canadian Claimants combined?

2 A. I need a calculator. Let's see. So
3 it looks like, based on my late-afternoon
4 arithmetic, that the PTV total minutes are
5 greater than the sum of the JSC, CTC,
6 Devotional and Canadian in each year. That
7 looks to be correct.

8 Q. And just so I understand this table,
9 you know, if a station was retransmitted by
10 more than one cable system, how would those
11 minutes be calculated?

12 A. Can you repeat that? I'm sorry. I
13 just got caught up in something.

14 Q. Sure. If a station was retransmitted
15 by more than one cable system, how would those
16 minutes be calculated? Would they just be
17 calculated one time or would they be basically
18 multiplied by the number of cable systems that
19 carried that station?

20 A. Figure 4 here is just a summary of the
21 minutes by the retransmitted station, so each
22 retransmitted station in this table is included
23 once and it gets a weight of one.

24 Q. Okay. Do you know, or do you recall,
25 you know, roughly what percentage of the

1 minutes for, let's take Joint Sports Claimants,
2 were attributable to WGNA?

3 A. No. As I testified earlier, I flagged
4 the programs as compensable/non-compensable on
5 WGNA by Claimant type, but I didn't -- I don't
6 recall tracking the shares by, you know, of
7 different Claimant types.

8 Q. And if I wanted to go figure that out,
9 for example, where would I look for that
10 information?

11 A. The database that I created has that
12 information in it and would require just
13 simply, you know, adding up these minutes.
14 They are reported directly in the database.

15 Q. Okay. I would like to turn now to
16 figure 10 of your rebuttal report,
17 Exhibit 2007.

18 I believe you testified about this
19 earlier. This figure is entitled Proportion of
20 Educational Stations in Dr. Gray's Sample
21 Versus the Population.

22 Do you see that?

23 A. I do, yes.

24 Q. And just to be clear, as I understand
25 it, this shows that Dr. Gray under-sampled

1 Public Television stations in three of the four
2 years. Is that right?

3 A. Yes. Dr. Gray's samples
4 under-represent educational stations in 2010,
5 2011, and 2013.

6 Q. And is a study that under-samples
7 educational stations a reliable study?

8 A. It depends on what that study is being
9 used for.

10 Q. And what's your basis for that? What
11 makes you say "it depends"?

12 A. Well, if you are using that sample to
13 study something that's uncorrelated with
14 station type, that is unrelated to station
15 type, then that may not be a significant
16 factor.

17 Q. But let's just say for purposes of
18 this proceeding, if a -- is a study that
19 under-samples educational stations a reliable
20 study if it is being used for the purpose of
21 determining relative values of programming?

22 A. In -- so what I testified to earlier,
23 and I think answers your question, is that this
24 particular sample, when relied on to
25 extrapolate the share of PTV minutes, would

1 yield biased estimates consistent with the
2 biases that we see in the figure.

3 Q. So a study that under-samples
4 educational stations would yield bias -- would
5 yield bias relative value estimates as to
6 educational stations, correct?

7 A. Yeah, if uncorrected and unaddressed,
8 yes.

9 Q. I would like to turn now to page 17 of
10 your rebuttal testimony. I will put this on
11 the ELMO. Okay.

12 Dr. Bennett, one of your criticisms of
13 Dr. Gray's methodology is that his assignment
14 of programs to Claimant categories is flawed
15 and unreliable.

16 Is that correct?

17 A. Yes, that was -- yes.

18 Q. Does this criticism of his methodology
19 have any impact on Public Television's share?

20 A. This criticism has an effect on all
21 Claimants' shares, to the extent that you
22 categorize incorrectly and, for example, over,
23 you know, assign too many programs or inflate
24 the share of one Claimant, you by definition
25 are driving down the shares of other Claimants.

1 Q. And how would that impact public --
2 well, let me strike that.

3 I mean, how would that impact Public
4 Television? My understanding from reading this
5 is that none of these, within the Public
6 Television category, as you testified earlier,
7 you know, all programming within that category
8 is compensable.

9 And so you didn't even really, you
10 know, go in and assess particular programs
11 within that category.

12 I understand that this criticism might
13 affect the relative relationship of all the --
14 of the values of all the other categories, but
15 as to Public Television, it would have no
16 impact, correct?

17 A. Yeah, that appears to be correct. If
18 -- so just give me one moment here. Right. So
19 assuming that Dr. Gray had correctly
20 categorized the PTV programming, these other
21 issues with this categorization would only
22 cause distortions in their shares.

23 Q. And do you have any basis for
24 believing that Dr. Gray did not properly
25 account for Public Television programming?

1 A. Figure 1 in my -- so it is page 6 of
2 my rebuttal testimony, it does show that -- I
3 will wait for people.

4 Q. So figure --

5 A. Figure 1 on page 6, which is the
6 average distribution of Gray's categorized
7 programs by station type.

8 Q. Hold on a second. Let me put it on
9 the screen.

10 A. So in the second row, the educational
11 station type, those should all be PTV minutes.
12 Dr. Gray does in his categorization assign some
13 educational minutes to the Devotional
14 Claimants.

15 This figure here is an on average, so
16 it is not going to clearly spell out the
17 magnitude of that error.

18 I believe that's also in a footnote,
19 footnote 11, page 6, as well. It spells out
20 this evidence, this categorization issue there.

21 Q. But to the extent, as I understand it,
22 the extent to which Dr. Gray mistakenly
23 included devotional programming that was on
24 Public Television, included that in the
25 Devotional category, that would result in a

1 bias that would reduce the share of Public
2 Television, correct?

3 A. Yes, if we're just interested in
4 accounts of programs and the accounts of
5 airings. In the other analysis, the distant
6 viewing analysis, all bets are off.

7 Q. Let's turn now, Dr. Bennett, to figure
8 18 of your rebuttal report. I don't recall
9 whether you testified about this earlier. But
10 if you could at least, if you did, just refresh
11 us on what does this table show?

12 A. I just want to look at my report just
13 to be 100 percent sure that I got this right.

14 Q. Sure. That table is on page 22.

15 A. Okay. So in Dr. Gray's regression
16 analysis -- yes, that's right. In Dr. Gray's
17 regression analysis, he did not include the
18 sampling weights when estimating the
19 coefficients of his model.

20 This figure, figure 18, shows what Dr.
21 Gray would have obtained had he included the
22 sampling weights in that regression.

23 Q. And how does the use of sampling
24 weights impact Public Television's share?

25 A. So it looks to be mixed. In 2010, the

1 PTV share goes down slightly. It then is
2 higher in 2011 and 2012 by including the
3 sampling weights, and would be lowered in 2013.
4 So it is a mixed effect.

5 Q. Okay. And I know you are not
6 endorsing Dr. Gray's methodology, but would you
7 agree with me at least that the recalculation
8 you have made in this table, or the
9 calculations that you have made in this table
10 are at least a small improvement over what Dr.
11 Gray did in his analysis?

12 A. So I think my testimony here was that
13 the regression, the regression itself, the
14 estimates coming out of it, don't reflect the
15 relationship in the population.

16 And then if you included the sampling
17 weights for the purpose of trying to reflect
18 the relationship in the population, these are
19 the numbers you would get.

20 The study itself, though, and the
21 regression itself is, as I have testified, is
22 fundamentally flawed, and it is difficult for
23 me to characterize this as an improvement.
24 It's -- it's an assessment of what he would
25 have obtained had he included the sampling

1 weights.

2 Q. And you think he should have included
3 the sampling weights, correct?

4 A. I, generally speaking, if running a
5 regression where you have an equal sampling
6 weight, if your objective is to estimate the
7 relationship that holds in the population,
8 then, yes, you should include the sampling
9 weights in that regression.

10 Q. I would now like to turn to Figure 22
11 of your rebuttal report. And I believe you
12 also testified about this figure as well. But,
13 again, just given it is late afternoon, if you
14 could just again summarize what you were trying
15 to get at in this Figure 22 labeled Aggregate
16 Difference Between Distant Household
17 Quarter-Hour Shares, Estimated By Dr. Gray and
18 Reported By Nielsen.

19 A. Dr. Gray, one way that he could have
20 calculated shares would have been to rely
21 directly on the information in the Nielsen data
22 and not on any other imputed values. Had he
23 done that -- so this table is showing a
24 comparison of what he would have gotten in
25 terms of shares relative to what he actually

1 obtained.

2 And it is showing, for example, that
3 in 2010 Dr. Gray's imputation relative to the
4 actual Nielsen records causes the Canadian
5 share to fall by .3 percent, percentage points,
6 causes the CTV Claimant's share to fall by
7 11.23 percent, causes the Devotional to go up
8 by .8 percent, causes the Program Suppliers to
9 go up by 11.98 percent, and causes the PTV
10 Claimant's share to go down by 2.08 percent,
11 and causes the JSC share to go up
12 by .83 percent.

13 JUDGE STRICKLER: And, again, just so
14 the record is clear because we talked about
15 this earlier, when you say percent up or down,
16 you mean percentage points?

17 THE WITNESS: Percentage points,
18 correct, yes.

19 JUDGE STRICKLER: Thank you.

20 BY MR. DOVE:

21 Q. And so just -- and I think I
22 understand this now, so let's take the
23 Commercial Television Claimants, for example.
24 I think in paragraph 65 of your report you
25 focus on them specifically.

1 What was -- the impact over the four
2 years on Commercial Television's share, what
3 does this chart show?

4 A. So it is showing, in the CTV column,
5 it shows the impact of Dr. Gray's imputation
6 methodology relative to what was in the --
7 reported in the Nielsen data. It shows that
8 the CTV share in 2010 dropped by 11.23 percent,
9 using Dr. Gray's imputation.

10 His imputation results in the CTV's
11 share going down by .76 percentage points in
12 2011, down by 1.68 percentage points in 2012,
13 and down by 4.07 percentage points in 2013.

14 Q. So it is biased against Commercial
15 Television for those years for that reason,
16 correct?

17 A. Dr. Gray's imputation effectively
18 eliminates -- excuse me, these are shares.

19 It disproportionately gives distant
20 viewing households to other Claimant groups
21 relative to the CTV. That's what that tells
22 you. Their share is -- is going down.

23 JUDGE STRICKLER: The comparison you
24 are making is between the imputation done by
25 Dr. Gray and what he would have come up with if

1 he had only used the Nielsen data that actually
2 showed positive distant viewing; is that right?

3 THE WITNESS: Correct. And if he had
4 imputed a zero, you would still get the same
5 result.

6 JUDGE STRICKLER: The same result --

7 THE WITNESS: Like --

8 JUDGE STRICKLER: -- as if they just
9 weren't there at all?

10 THE WITNESS: Right.

11 JUDGE STRICKLER: Thank you.

12 BY MR. DOVE:

13 Q. And so it had a negative impact on
14 Commercial Television in terms of share; is
15 that fair?

16 A. Yes.

17 Q. And that same impact plays out with
18 regard to Public Television, correct; it had a
19 negative impact in all four years as to Public
20 Television, correct?

21 A. In all four years PTV's share is -- is
22 lower under Dr. Gray's imputation than under
23 the shares calculated directly from Nielsen.

24 Q. And I would now like to turn to figure
25 24, which you testified earlier are the

1 confidence intervals for Dr. Gray's shares with
2 his distant viewing estimates treated as true
3 observations.

4 Do you see that?

5 A. Yes, I do.

6 Q. Focusing in on the ranges of the
7 confidence intervals for Public Television,
8 what do those ranges for Public Television
9 represent?

10 A. So these are the 95 percent confidence
11 intervals that Dr. Gray would have obtained had
12 he correctly -- had he correctly treated his
13 sampling as stratified cluster sampling.

14 So these are the confidence intervals
15 that he would have obtained had he done that.

16 Q. Is it fair to say that these
17 percentages represent a floor and a ceiling for
18 Public Television's royalty share as estimated
19 by Dr. Gray?

20 A. So the "as estimated by Dr. Gray"
21 part, it is not clear how to answer that.

22 Q. Well, let me ask it. It is a floor --
23 is it fair to say it is a floor and a ceiling
24 for something? Maybe you can define what that
25 something is. I am just trying to get a sense

1 of what's being represented here. It is a
2 floor and a ceiling for what measure?

3 A. So these estimates -- so, first of
4 all, the confidence intervals that are reported
5 here are all centered on the share estimates as
6 calculated by Dr. Gray.

7 So to the extent that there is bias in
8 those, that's going to cause those intervals to
9 be incorrectly centered.

10 Now, with respect to the floor and the
11 ceiling aspect, the floor -- so the upper and
12 lower bounds here are calculated ignoring the
13 uncertainty that's inherent in his imputation.

14 I would argue that the true floor and
15 ceiling are actually, you know, the floor would
16 be much lower or potentially much lower and the
17 ceiling potentially much higher than even
18 what's reported here.

19 Q. And, you know, I understand -- maybe
20 this is what you just said -- but I understand
21 you don't believe these shares are reliable
22 estimates of the parties' relative value. Is
23 that fair?

24 A. I don't believe that the shares are
25 reliable estimates of the Claimants' shares.

1 And I also believe that these confidence
2 intervals understate the degree of imprecision
3 that is inherent in these estimates.

4 Q. And one of the reasons you don't
5 believe these estimates are reliable is because
6 there are various biases that you have
7 identified, correct?

8 A. Yes, there are biases that I have
9 identified.

10 Q. And some of these biases work in favor
11 of -- in the instance of Public Television, as
12 we have discussed, some of these biases work in
13 favor of Public Television and some might work
14 against; is that right?

15 A. I think, for Public Television, I
16 think the biases that I had described earlier
17 were with respect to the proportion of
18 educational stations that were biased downwards
19 in 2010, '11, and '13, and biased upwards in
20 2013.

21 MR. DOVE: I have no further
22 questions. Thank you, Dr. Bennett.

23 JUDGE BARNETT: Any further
24 cross-examination of Dr. Bennett? Any redirect
25 examination?

1 MR. ERVIN: No redirect, Your Honor.

2 JUDGE BARNETT: Okay. Thank you,
3 Dr. Bennett. You may be -- oh, anything from
4 the Bench?

5 JUDGE STRICKLER: No.

6 JUDGE FEDER: Nothing.

7 JUDGE BARNETT: Thank you,
8 Dr. Bennett. You may be excused.

9 THE WITNESS: Thank you.

10 JUDGE BARNETT: I see that
11 Ms. McLaughlin will be after the 5th of March.
12 Will Mr. Hartman be available on Monday?

13 MR. GARRETT: Your Honor, we had
14 discussed with the parties having Dr. Israel
15 and Mr. Hartman go right after each other
16 starting on the 12th.

17 JUDGE BARNETT: Okay.

18 MR. GARRETT: The following Monday. I
19 believe the Canadians are up next here,
20 followed by Ms. McLaughlin.

21 JUDGE BARNETT: Thank you. Mr.
22 Satterfield?

23 MR. SATTERFIELD: Yes, our plan, we
24 have discussed it with the other parties to try
25 to streamline the proceeding. Two of our

1 witnesses, we have now discussed having them
2 appear on paper only. Beverly Kirshenblatt and
3 Danielle Boudreau would appear only on paper.

4 JUDGE BARNETT: And that is agreed or
5 are you still discussing?

6 MR. SATTERFIELD: No, that's agreed.

7 JUDGE BARNETT: Great. Thank you.

8 MR. SATTERFIELD: So then we would
9 start with our expert witnesses Monday morning
10 and possibly into part of Tuesday is what we
11 are hoping.

12 JUDGE BARNETT: Thank you. Ms.
13 Plovnick.

14 MS. PLOVNICK: Your Honor, the parties
15 have agreed to accommodate Dr. Frankel's
16 health-related conflict, surgery starting on
17 the 9th, and so they are going to allow him to
18 follow the Canadian Claimants and take him out
19 of order.

20 JUDGE BARNETT: Thank you.

21 MR. SATTERFIELD: Just the parties'
22 understanding, Shum will be here on Tuesday.

23 MR. GARRETT: Who is first?

24 MR. SATTERFIELD: Dr. Conrad.

25 JUDGE BARNETT: Thank you. Now, we

1 have the issue with the 21st. And we have the
2 issue of only having one Friday available.

3 Loathe as I am, and maybe it isn't
4 necessary, but the 26th, which is the following
5 Monday, we could be made available. I haven't
6 made the reservations yet. So just on the
7 outside chance I wouldn't get away, I can be
8 here, if that's a day we need.

9 So I will give you some time to let us
10 know about that before I book any flights to
11 get out of Dodge. Mr. Garrett?

12 MR. GARRETT: Your Honor, at least my
13 hope is that we will get this done by the 20th.
14 That's what I think all the parties are working
15 for.

16 I think your offering that Friday
17 would certainly help, but I think our fervent
18 hope is that we get it done by the 20th.

19 JUDGE BARNETT: We all have the same
20 goal. I realize that. It is just, you know,
21 some things happen. People get ill. Planes
22 get missed. Things happen. Schedules get --
23 examinations run long. You just never know.

24 So I appreciate your concerted and
25 cooperative efforts. As for now, we will be at

1 recess until Monday morning at 9:00 o'clock.

2 (Whereupon, at 4:27 p.m., the hearing
3 recessed, to reconvene at 9:00 a.m. on Monday,
4 March 5, 2018.)

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1	C O N T E N T S				
2	WITNESS:	DIRECT	CROSS	REDIRECT	VOIR DIRE
3	GREGORY CRAWFORD				
4	By Mr. Cho		1697		
5	By Mr. Stewart			1754	
6	CERIL SHAGRIN				
7	By Mr. Stewart	1765			
8	By Mr. Olaniran		1781		
9	By Mr. MacLean		1800		
10	By Mr. Stewart			1801	
11	CHRISTOPHER BENNETT				
12	By Mr. Ervin	1804			
13	By Mr. MacLean		1883		
14	By Mr. Olaniran		1892		
15	By Mr. Dove		1929		
16					
17	AFTERNOON SESSION: 1824				
18					
19	CONFIDENTIAL SESSIONS: NONE				
20					
21					
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CERTIFICATE

I certify that the foregoing is a true and accurate transcript, to the best of my skill and ability, from my stenographic notes of this proceeding.

3-1-18

Date

Joe Strickland
Signature of the Court Reporter3-1-18

Date

Joe Bryant
Signature of the Court Reporter

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